

L Number	Hits	Search Text	DB	Time stamp
1	2366	("514/183,252.12").CCLS	USPAT	2003/11/17 16:57
2	1117	("544/336,387").CCLS	USPAT	2003/11/17 16:57
3	39	((514/183,252.12").CCLS) and ((544/336,387").CCLS)	USPAT	2003/11/17 16:57

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|--------------|---|--|
| NEWS 1 | Web Page URLs for STN Seminar Schedule - N. America | |
| NEWS 2 | "Ask CAS" for self-help around the clock | |
| NEWS 3 | SEP 09 | CA/CAplus records now contain indexing from 1907 to the present |
| NEWS 4 | AUG 05 | New pricing for EUROPATFULL and PCTFULL effective August 1, 2003 |
| NEWS 5 | AUG 13 | Field Availability (/FA) field enhanced in BEILSTEIN |
| NEWS 6 | AUG 18 | Data available for download as a PDF in RDISCLOSURE |
| NEWS 7 | AUG 18 | Simultaneous left and right truncation added to PASCAL |
| NEWS 8 | AUG 18 | FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation |
| NEWS 9 | AUG 18 | Simultaneous left and right truncation added to ANABSTR |
| NEWS 10 | SEP 22 | DIPPR file reloaded |
| NEWS 11 | SEP 25 | INPADOC: Legal Status data to be reloaded |
| NEWS 12 | SEP 29 | DISSABS now available on STN |
| NEWS 13 | OCT 10 | PCTFULL: Two new display fields added |
| NEWS 14 | OCT 21 | BIOSIS file reloaded and enhanced |
| NEWS 15 | OCT 28 | BIOSIS file segment of TOXCENTER reloaded and enhanced |
| NEWS EXPRESS | NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003 | |
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=> file reg
COST IN U.S. DOLLARS

SINCE FILE TOTAL
ENTRY SESSION

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0.21

0.21

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STRUCTURE FILE UPDATES: 16 NOV 2003 HIGHEST RN 617673-49-1
 DICTIONARY FILE UPDATES: 16 NOV 2003 HIGHEST RN 617673-49-1

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

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 conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=>

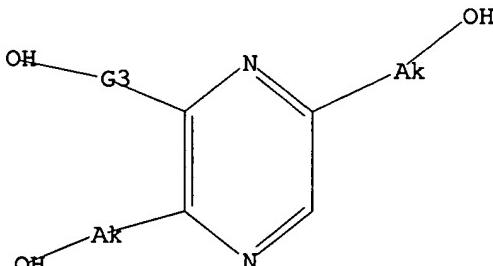
Uploading 09903092.12

L1 STRUCTURE uploaded

=> d 11

L1 HAS NO ANSWERS

L1 STR



G1 Cb,Cy

G2 H,OH

G3 H,Ak

Structure attributes must be viewed using STN Express query preparation.

=> s 11

SAMPLE SEARCH INITIATED 07:39:31 FILE 'REGISTRY'
 SAMPLE SCREEN SEARCH COMPLETED - 6351 TO ITERATE

15.7% PROCESSED 1000 ITERATIONS
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
 SEARCH TIME: 00.00.01

1 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
 BATCH **COMPLETE**
 PROJECTED ITERATIONS: 122244 TO 131796
 PROJECTED ANSWERS: 1 TO 278

L2 1 SEA SSS SAM L1

=> s ll sss full
 FULL SEARCH INITIATED 07:39:37 FILE 'REGISTRY'
 FULL SCREEN SEARCH COMPLETED - 126768 TO ITERATE

100.0% PROCESSED 126768 ITERATIONS 31 ANSWERS
 SEARCH TIME: 00.00.03

L3 31 SEA SSS FUL L1

| | | | |
|----------------------|--|------------|---------|
| => file caold | | SINCE FILE | TOTAL |
| COST IN U.S. DOLLARS | | ENTRY | SESSION |
| FULL ESTIMATED COST | | 148.15 | 148.36 |

FILE 'CAOLD' ENTERED AT 07:39:47 ON 17 NOV 2003
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FILE COVERS 1907-1966
 FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

=> s ll
REG1stRY INITIATED
 Substance data SEARCH and crossover from CAS REGISTRY in progress...
 Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 07:39:52 FILE 'REGISTRY'
 SAMPLE SCREEN SEARCH COMPLETED - 6351 TO ITERATE

15.7% PROCESSED 1000 ITERATIONS

1 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
 SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
 BATCH **COMPLETE**
 PROJECTED ITERATIONS: 122244 TO 131796
 PROJECTED ANSWERS: 1 TO 278

L4 1 SEA SSS SAM L1

L5 0 L4

```
=> file marpat s 11
'S' IS AN AMBIGUOUS FILE OR CLUSTER NAME
SAFETY          - Occupational Health and Safety Cluster
SESSION         - Current files with L-numbers Cluster
STRUCTURE       - Structure Searching Cluster
SUPPLIERS        - Product Directories and Suppliers Cluster
SCISEARCH       - ISI Science Citation Index from 1974 - present
SIGLE           - Grey Literature in Europe from 1976 - present
SOLIDSTATE      - Solid State and Superconductivity Abstracts from 1981
SOLIS            - German literature in social sciences 1945-present
SPECINFO         - Spectral Database Information System
STANDARDS        - The International Standards Database
STNGUIDE         - Descriptive information about STN databases
STNMAIL          - STN Electronic Mail Service
SWETSCAN         - Swets Table of Contents from 1993 - present
SYNTHLINE        - Synthline Drug Synthesis Database 1984-present
```

ENTER FILE OR CLUSTER NAME (IGNORE):file marpat

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Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.

ENTER A FILE NAME OR (IGNORE):marpat

'L1' IS NOT A VALID FILE NAME

Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.

ENTER A FILE NAME OR (IGNORE):Marpat

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 0.80 | 149.96 |

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FILE CONTENT: 1988-PRESENT (VOL 104 ISS 15-VOL 139 ISS20) (20031114ED)

MOST RECENT CITATIONS FOR PATENTS FROM FIVE MAJOR ISSUING AGENCIES
 (COVERAGE TO THESE DATES IS NOT COMPLETE):

US 6632961 14 OCT 2003
 DE 10232663 16 OCT 2003
 EP 1354869 22 OCT 2003
 JP 2003300880 21 OCT 2003
 WO 2003087212 23 OCT 2003

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

=> s 11

SAMPLE SEARCH INITIATED 07:40:59 FILE 'MARPAT'
 SAMPLE SCREEN SEARCH COMPLETED - 884 TO ITERATE

100.0% PROCESSED 884 ITERATIONS
 SEARCH TIME: 00.00.07

11 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
 BATCH **COMPLETE**
 PROJECTED ITERATIONS: 15975 TO 19385
 PROJECTED ANSWERS: 21 TO 419

L6 11 SEA SSS SAM L1

=> d 16 1-11

L6 ANSWER 1 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 139:292094 MARPAT
 TI Preparation of substituted tetracycline compounds for the treatment of bacterial infections and neoplasms
 IN Nelson, Mark L.; Ohemeng, Kwasi; Frechette, Roger; Abato, Paul; Assefa, Haregewein; Bandarage, Upul; Berniac, Joel; Bhatia, Beena; Chen, Jackson; Ismail, Mohamed Y.; Kim, Oak A.; Mathews, Jude; McIntyre, Laura; Nihlawi, Mohammed; Pearson, Andre; Reddy, Laxma; Sheahan, Paul; Sizensky, Emmanuelle; Tourigny, Justin; Verma, Atul K.; Viski, Peter; Warchol, Tadeusz

PA Paratek Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 118 pp.
 CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|--|
| PI | WO 2003079984 | A2 | 20031002 | WO 2003-US8324 | 20030318 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG |

PRAI US 2002-366915P 20020321
 US 2002-367045P 20020321

US 2002-367048P 20020321
 US 2002-395468P 20020712
 US 2003-440305P 20030114

L6 ANSWER 2 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 139:261323 MARPAT
 TI Preparation of aminocarbonyl derivatives as inhibitors of histone deacetylase
 IN Van Emelen, Kristof; De Winter, Hans Louis Jos; Dyatkin, Alexey Borisovich; Verdonck, Marc Gustaaf Celine; Meerpoel, Lieven
 PA Janssen Pharmaceutica N.V., Belg.
 SO PCT Int. Appl., 58 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 8

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|--|
| PI | WO 2003076421 | A1 | 20030918 | WO 2003-EP2511 | 20030311 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG |

PRAI US 2002-363799P 20020313

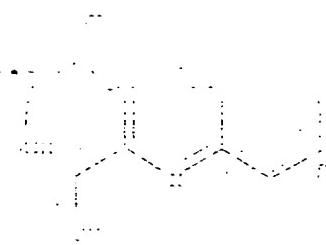
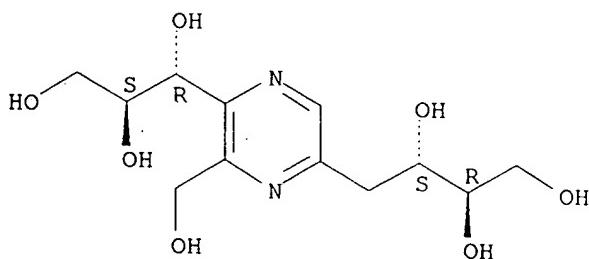
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 137:20297 MARPAT
 TI Preparation of ortho-substituted and meta-substituted bisaryl compounds as potassium channel blockers
 IN Peukert, Stefan; Brendel, Joachim; Hemmerle, Horst; Kleemann, Heinz-Werner
 PA Aventis Pharma Deutschland GmbH, Germany
 SO PCT Int. Appl., 67 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|--|
| PI | WO 2002044137 | A1 | 20020606 | WO 2001-EP13294 | 20011117 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG |

L7 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1986:570812 CAPLUS
DN 105:170812
TI Identification of novel non-volatile pyrazines in commercial caramel colors.
AU Tsuchida, Hironobu; Morinaka, Keizo; Fujii, Satoshi; Komoto, Masahiko;
Mizuno, Susumu
CS Dep. Agric. Chem., Univ. Kobe, Kobe, 657, Japan
SO Developments in Food Science (1986), 13(Amino-Carbonyl React. Food Biol.
Syst.), 85-94
CODEN: DFSCDX; ISSN: 0167-4501
DT Journal
LA English
IT 104670-20-4 104670-21-5 104670-31-7
104670-34-0 104670-37-3 104670-38-4
104696-24-4
RL: BIOL (Biological study)
(of ammonia caramel color)
RN 104670-20-4 CAPLUS
CN 1,2,3-Butanetriol, 4-[6-(hydroxymethyl)-5-(1,2,3-trihydroxypropyl)pyrazinyl]-, [2R-[2R*,3S*(1R*,2S*)]]- (9CI) (CA INDEX
NAME)

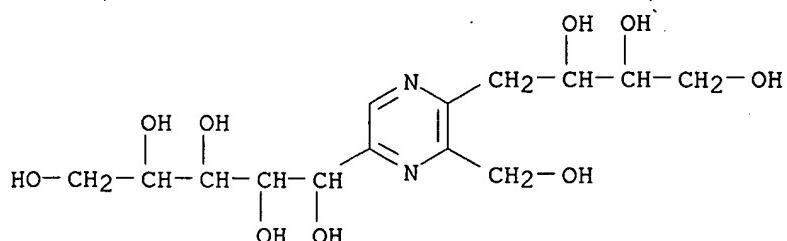
Absolute stereochemistry.



Patel

<11/18/2003>

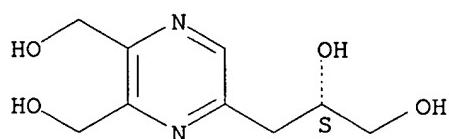
RN 104670-21-5 CAPLUS

CN Pentitol, 1-C-[6-(hydroxymethyl)-5-(2,3,4-trihydroxybutyl)pyrazinyl]-
(9CI) (CA INDEX NAME)

RN 104670-31-7 CAPLUS

CN 2,3-Pyrazinedimethanol, 5-(2,3-dihydroxypropyl)-, (S)- (9CI) (CA INDEX
NAME)

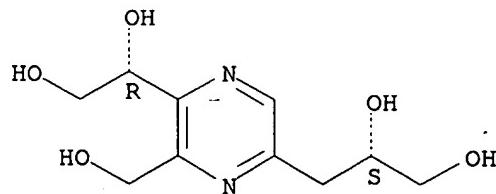
Absolute stereochemistry.



RN 104670-34-0 CAPLUS

CN 2,3-Pyrazinedimethanol, 5-(2,3-dihydroxypropyl)-.alpha.2-(hydroxymethyl)....
[R-(R*,S*)]- (9CI) (CA INDEX NAME)

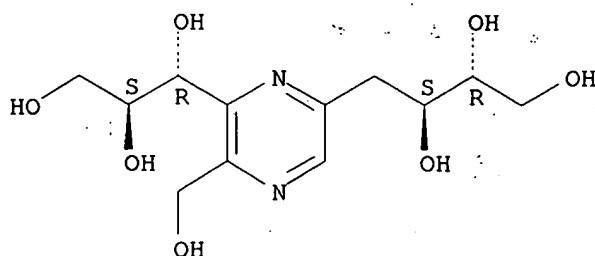
Absolute stereochemistry.



RN 104670-37-3 CAPLUS

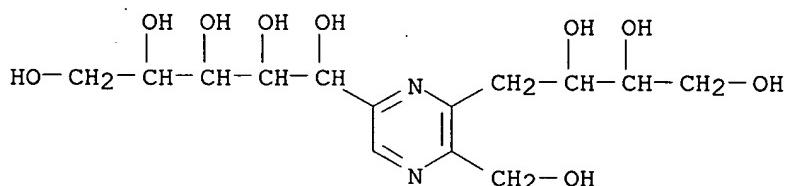
CN 1,2,3-Butanetriol, 4-[5-(hydroxymethyl)-6-(1,2,3-
trihydroxypropyl)pyrazinyl]-, [1R-[1R*(2R*,3S*),2S*]]- (9CI) (CA INDEX
NAME)

Absolute stereochemistry.



RN 104670-38-4 CAPLUS

CN Pentitol, 1-C-[5-(hydroxymethyl)-6-(2,3,4-trihydroxybutyl)pyrazinyl]- (9CI) (CA INDEX NAME)

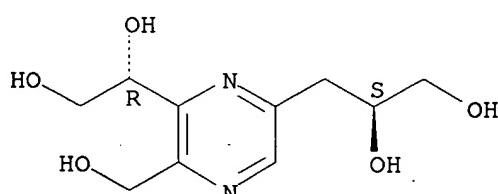


RN 104696-24-4 CAPLUS

CN 2,3-Pyrazinedimethanol, 5-(2,3-dihydroxypropyl)-.alpha.3-(hydroxymethyl)-, [R-(R*,S*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Absolute stereochemistry.



AB Gas chromatog.-mass-spectrometric analyses of trimethylsilyl derivs. of the nonvolatile pyrazine fraction obtained by an ion exchange method demonstrated the presence of 25 polyhydroxyalkylpyrazines in an ammonia caramel color and of 17 polyhydroxyalkylpyrazines in a sulfite-ammonia caramel color. Three novel nonvolatile pyrazines of the latter were isolated by preparative ion exchange- and paper chromatog., and identified as 2-tetrahydroxybutyl-6-(3',4'-dihydroxy-1'-butenyl)pyrazine [104670-24-8], 2-(2',3'-dihydroxytetrahydrofuryl)-6-(2'',3'',4'',4''-tetrahydro-2,3,4,5-tetrahydroxybutyl)pyrazine [104670-25-9] and 2-tetrahydroxybutyl-6-(2',3'-dihydroxytetrahydrofuryl)pyrazine [104696-21-1]. A possible formation pathway of the novel pyrazines was proposed.

L7 ANSWER 17 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

ANSWER 17 OF 49 CAPLUS

AN 1985:225908 CAPLUS

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DN 102:225908

102:225908

TI Degradation of clavulanic acid in aqueous alkaline solution: Disolation of clavulanic acid and structural investigation of degradation products

Disolation of clavulanic acid and structural investigation of degradation products

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NEWS 4 AUG 05 New pricing for EUROPATFULL and PCTFULL effective August 1, 2003
NEWS 5 AUG 13 Field Availability (/FA) field enhanced in BEILSTEIN
NEWS 6 AUG 18 Data available for download as a PDF in RDISCLOSURE
NEWS 7 AUG 18 Simultaneous left and right truncation added to PASCAL
NEWS 8 AUG 18 FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation
NEWS 9 AUG 18 Simultaneous left and right truncation added to ANABSTR
NEWS 10 SEP 22 DIPPR file reloaded
NEWS 11 SEP 25 INPADOC: Legal Status data to be reloaded
NEWS 12 SEP 29 DISSABS now available on STN
NEWS 13 OCT 10 PCTFULL: Two new display fields added
NEWS 14 OCT 21 BIOSIS file reloaded and enhanced
NEWS 15 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced

NEWS EXPRESS NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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|---------------------|----------------------|------------------|---------------|
| FULL ESTIMATED COST | | 0.21 | 0.21 |

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STRUCTURE FILE UPDATES: 13 NOV 2003 HIGHEST RN 616855-37-9
DICTIONARY FILE UPDATES: 13 NOV 2003 HIGHEST RN 616855-37-9

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

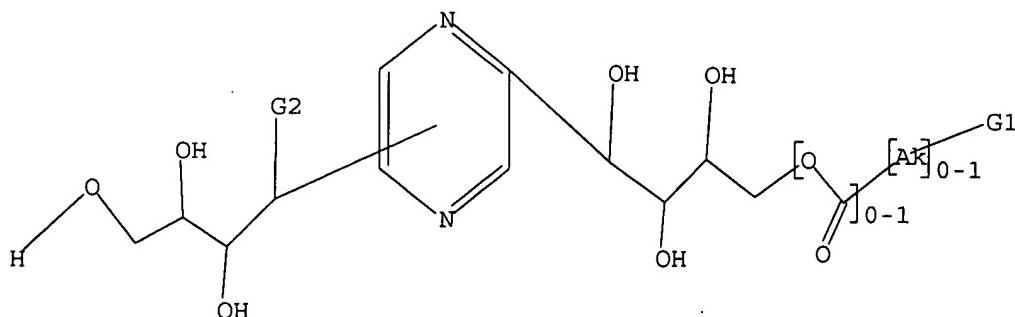
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Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=>
Uploading 09903092.6

L1 STRUCTURE UPLOADED

=> d 11
L1 HAS NO ANSWERS
L1 STR



G1 Cb,Cy

G2 H,OH

Structure attributes must be viewed using STN Express query preparation.

=> s 11 sss full
FULL SEARCH INITIATED 11:25:31 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 456 TO ITERATE

100.0% PROCESSED 456 ITERATIONS
SEARCH TIME: 00.00.01

0 ANSWERS

L2 0 SEA SSS FUL L1

=> file marpat

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 148.15 | 148.36 |

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FILE CONTENT: 1988-PRESENT (VOL 104 ISS 15-VOL 139 ISS19) (20031107ED)

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| | | |
|----|------------|-------------|
| US | 6632922 | 14 OCT 2003 |
| DE | 20300703 | 09 OCT 2003 |
| EP | 1352910 | 15 OCT 2003 |
| JP | 2003288905 | 10 OCT 2003 |
| WO | 2003084330 | 16 OCT 2003 |

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

=> s 11 sss full
 FULL SEARCH INITIATED 11:25:45 FILE 'MARPAT'
 FULL SCREEN SEARCH COMPLETED - 4812 TO ITERATE

100.0% PROCESSED 4812 ITERATIONS (1 INCOMPLETE) 2 ANSWERS
 SEARCH TIME: 00.00.22

L3 2 SEA SSS FUL L1

=> file caplus

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 104.55 | 252.91 |

FILE 'CAPLUS' ENTERED AT 11:26:17 ON 14 NOV 2003
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FILE COVERS 1907 - 14 Nov 2003 VOL 139 ISS 21

FILE LAST UPDATED: 13 Nov 2003 (20031113/ED)

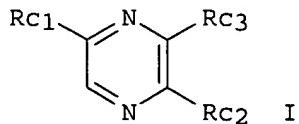
This file contains CAS Registry Numbers for easy and accurate substance identification.

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 AN 1999:77553 CAPLUS
 DN 130:139362
 TI Preparation of polyhydroxyalkylpyrazines as hypoglycemics
 IN Bouchard, Herve; Commercon, Alain; Peyronel, Jean-Francois; Terrier, Corinne
 PA Rhone-Poulenc Rorer S.A., Fr.
 SO PCT Int. Appl., 182 pp.
 CODEN: PIXXD2
 DT Patent
 LA French
 FAN.CNT 1

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| FR | 2766185 | A1 | 19990122 | FR 1997-9186 | 19970718 |
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| GI | | | | | |



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RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L4 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1998:752225 CAPLUS
 DN 130:3854
 TI Preparation of N-(aminohydroxyalkyl)quinazolinediones and analogs as glycan phosphatidylinositol cellular signaling inhibitors
 IN Kumar, Anil M.; Michnick, John; Underiner, Gail E.; Klein, J. Peter; Rice, Glenn C.
 PA Cell Therapeutics Inc, USA
 SO U.S., 76 pp., Cont.-in-part of U. S. Ser. No. 40820, abandoned.
 CODEN: USXXAM

DT Patent
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FAN.CNT 4

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| | AU 695674 | B2 | 19980820 | US 1993-40820 | A 19930331 |
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| | WO 1994-US3548 | W | 19940331 | | |
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PATENT FAMILY INFORMATION:

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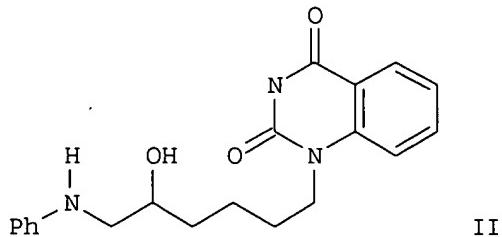
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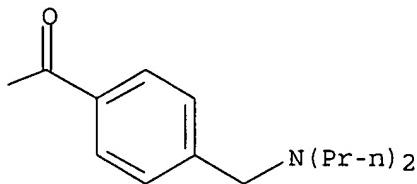
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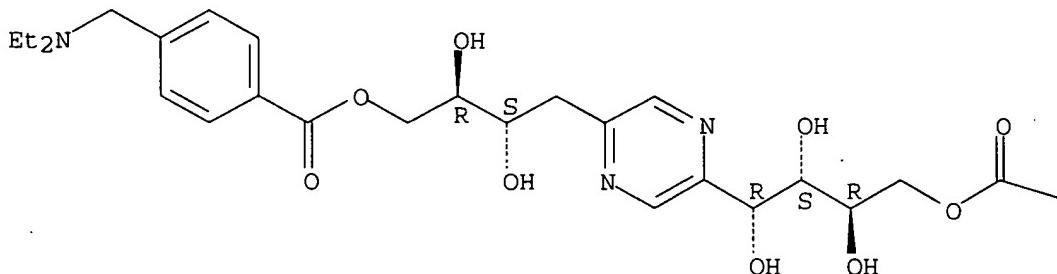


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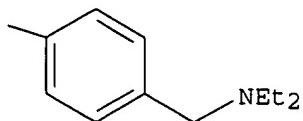
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Absolute stereochemistry.

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PAGE 1-B

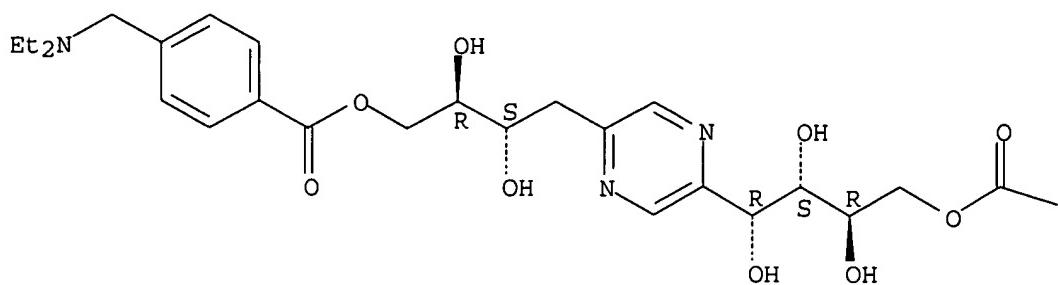


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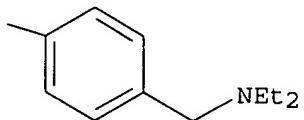
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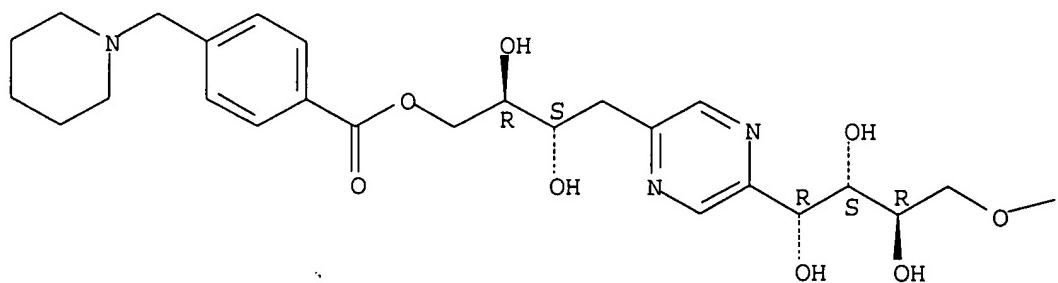


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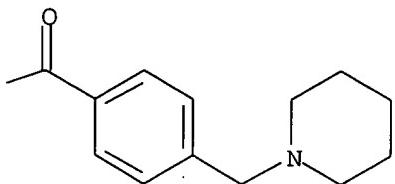
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Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

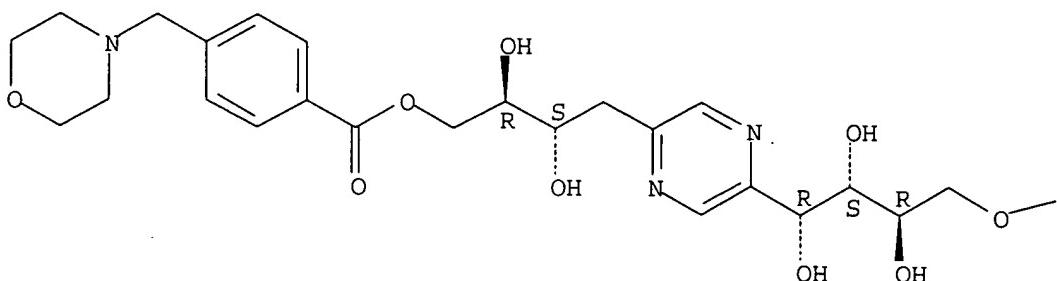


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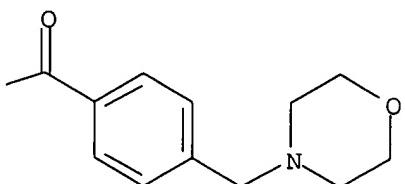
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Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

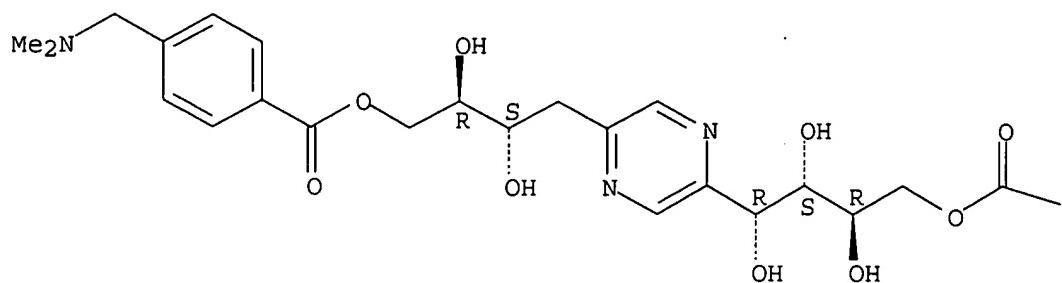


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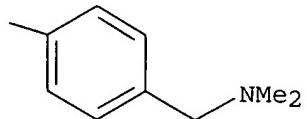
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Absolute stereochemistry.

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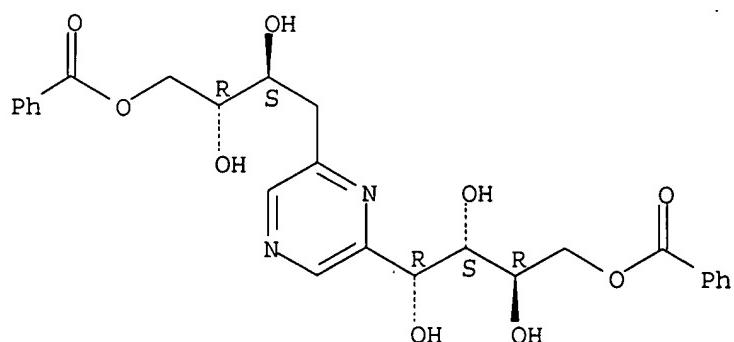
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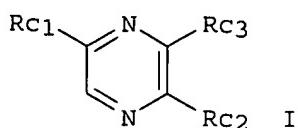
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CN 1,2,3,4-Butanetetrol, 1-[6-[(2S,3R)-4-(benzoyloxy)-2,3-dihydroxybutyl]pyrazinyl]-, 4-benzoate, (1R,2S,3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



GI



AB Title compds. [I; Rc1 = CH(OR4)CH(OR3)CH(OR2)CH2OR1 and Rc2 = e.g., CH(OR5)CH(OR6)CH(OR7)CH2OR8 and Rc3 = H; R1-R8 = COR9, CO2R10, CH2O2CR13, etc.; R9 = H, alkyl, NH2, etc.; R10 = (ar)alkyl, aryl; R13 = H, (ar)alkyl, aryl] were prep'd. Thus, deoxyfructosazine was treated with BzCl to give 4,4'-O,O-dibenzoyl-2-[(1R,2S,3R)-1,2,3,4-tetrahydroxybutyl]-5-[(2'S,3'R)-2,3,4-trihydroxybutyl]pyrazine. Data for biol. activity of I were given.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
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NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 SEP 09 CA/CAplus records now contain indexing from 1907 to the present
NEWS 4 AUG 05 New pricing for EUROPATFULL and PCTFULL effective August 1, 2003
NEWS 5 AUG 13 Field Availability (/FA) field enhanced in BEILSTEIN
NEWS 6 AUG 18 Data available for download as a PDF in RDISCLOSURE
NEWS 7 AUG 18 Simultaneous left and right truncation added to PASCAL
NEWS 8 AUG 18 FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation
NEWS 9 AUG 18 Simultaneous left and right truncation added to ANABSTR
NEWS 10 SEP 22 DIPPR file reloaded
NEWS 11 SEP 25 INPADOC: Legal Status data to be reloaded
NEWS 12 SEP 29 DISSABS now available on STN
NEWS 13 OCT 10 PCTFULL: Two new display fields added
NEWS 14 OCT 21 BIOSIS file reloaded and enhanced
NEWS 15 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced

NEWS EXPRESS NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003

NEWS HOURS STN Operating Hours Plus Help Desk Availability

NEWS INTER General Internet Information

NEWS LOGIN Welcome Banner and News Items

NEWS PHONE Direct Dial and Telecommunication Network Access to STN

NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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FILE 'HOME' ENTERED AT 11:18:55 ON 14 NOV 2003

=> file reg
COST IN U.S. DOLLARS

FULL ESTIMATED COST

| SINCE FILE
ENTRY | TOTAL
SESSION |
|---------------------|------------------|
| 0.21 | 0.21 |

FILE 'REGISTRY' ENTERED AT 11:19:04 ON 14 NOV 2003
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provided by InfoChem.

STRUCTURE FILE UPDATES: 13 NOV 2003 HIGHEST RN 616855-37-9
DICTIONARY FILE UPDATES: 13 NOV 2003 HIGHEST RN 616855-37-9

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=>
Uploading 09903092.5

L1 STRUCTURE UPLOADED

=> d 11
L1 HAS NO ANSWERS
L1 STR
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

=> file marpat
COST IN U.S. DOLLARS SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 0.40 0.61

FILE 'MARPAT' ENTERED AT 11:19:32 ON 14 NOV 2003
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FILE CONTENT: 1988-PRESENT (VOL 104 ISS 15-VOL 139 ISS19) (20031107ED)

MOST RECENT CITATIONS FOR PATENTS FROM FIVE MAJOR ISSUING AGENCIES
(COVERAGE TO THESE DATES IS NOT COMPLETE):

US 6632922 14 OCT 2003
DE 20300703 09 OCT 2003
EP 1352910 15 OCT 2003
JP 2003288905 10 OCT 2003
WO 2003084330 16 OCT 2003

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

```
=> s 11 sss full
FULL SEARCH INITIATED 11:19:57 FILE 'MARPAT'
FULL SCREEN SEARCH COMPLETED - 1825 TO ITERATE
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100.0% PROCESSED 1825 ITERATIONS
SEARCH TIME: 00.00.05

2 ANSWERS

L2 2 SEA SSS FUL L1

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=> d 12 fbib hitstr abs total
'HITSTR' IS NOT A VALID FORMAT FOR FILE 'MARPAT'
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The following are valid formats:

MSTR ----- All Markush structure(s) and related text information
MSTR(n) -- Markush structure(n) and related text information
IDE ----- AN and MSTR

ABS ----- AB
ALL ----- BIB, AB, IND, RE, and MSTR
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing Data
IPC ----- International Patent Classifications
MAX ----- ALL, plus Patent FAM, RE
PATTS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT, and FQHIT
SCAN ----- CC, SX, TI, ST, IT, and FQHIT (random display,
no answer numbers)
STD ----- BIB, IPC, and NCL (standard patent information)

IABS ----- ABS, indented with text labels
IALL ----- ALL, indented with text labels
IBIB ----- BIB, indented with text labels
IMAX ----- MAX, indented with text labels
ISTD ----- STD, indented with text labels
OBIB ----- AN, plus Bibliographic Data (original)
OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations
SIBIB ----- IBIB, no citations

HIT ----- Fields containing hit text terms and the Markush structures containing the query structure
FHIT ----- Fields containing the first hit text terms and the first Markush structures containing the query structure
QHIT ----- Fields containing query focus hit text terms and the Markush structures containing the query structure

FQHIT ---- Fields containing the first query focus hit text terms and the first Markush structures containing the query structure

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter "HELP DFIELDS" at an arrow prompt (>). Examples of formats include: "TI"; "TI,MSTR,ABS"; "BIB,ST"; "TI,IND"; "TI,SO". You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, FHIT, HIT, FQHIT, or QHIT) may be used with the DISPLAY ACC command to display the record for a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):BIB

| L2 | ANSWER 1 OF 2 | MARPAT | COPYRIGHT 2003 ACS on STN | |
|-----------|--|--------------|---------------------------|-----------------|
| AN | 133:120345 | MARPAT | | |
| TI | Preparation of pyrazinylhydroxyalkyl alkanoates as hypoglycemic agents | | | |
| IN | Bouchard, Herve; Commercon, Alain | | | |
| PA | Aventis Pharma, Fr. | | | |
| SO | PCT Int. Appl., 34 pp. | | | |
| | CODEN: PIXXD2 | | | |
| DT | Patent | | | |
| LA | French | | | |
| FAN.CNT 1 | | | | |
| | PATENT NO. | KIND | DATE | APPLICATION NO. |
| PI | WO 2000042027 | A1 | 20000720 | WO 2000-FR26 |
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HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG,
MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US,
UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
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| | FR 2788274 | B1 | 20010209 | 19990111 |
| | CA 2359463 | AA | 20000720 | CA 2000-2359463 |
| | EP 1140861 | A1 | 20011010 | EP 2000-900538 |
| | EP 1140861 | B1 | 20030702 | 20000107 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO | | | |
| | BR 2000007449 | A | 20011016 | BR 2000-7449 |
| | JP 2002534513 | T2 | 20021015 | 20000107 |
| | AT 244226 | E | 20030715 | JP 2000-593595 |
| | NO 2001003416 | A | 20010906 | AT 2000-900538 |
| | ZA 2001005657 | A | 20021010 | 20010710 |
| | US 2002077324 | A1 | 20020620 | ZA 2001-5657 |
| | PRAI | FR 1999-186 | 19990111 | 20010710 |
| | | WO 2000-FR26 | 20000107 | 20010711 |
| RE.CNT 6 | THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT | | | |

| | | | |
|----|--|--------|---------------------------|
| L2 | ANSWER 2 OF 2 | MARPAT | COPYRIGHT 2003 ACS on STN |
| AN | 130:139362 | MARPAT | |
| TI | Preparation of polyhydroxyalkylpyrazines as hypoglycemics | | |
| IN | Bouchard, Herve; Commercon, Alain; Peyronel, Jean-Francois; Terrier, Corinne | | |

PA Rhone-Poulenc Rorer S.A., Fr.

SO PCT Int. Appl., 182 pp.

CODEN: PIXXD2

DT Patent

LA French

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9903843 | A1 | 19990128 | WO 1998-FR1545 | 19980715 |
| | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | FR 2766185 | A1 | 19990122 | FR 1997-9186 | 19970718 |
| | FR 2766185 | B1 | 20010615 | | |
| | AU 9888105 | A1 | 19990210 | AU 1998-88105 | 19980715 |
| | EP 1001943 | A1 | 20000524 | EP 1998-939679 | 19980715 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI | | | | |
| | JP 2001510187 | T2 | 20010731 | JP 2000-503068 | 19980715 |
| | ZA 9806330 | A | 19990208 | ZA 1998-6330 | 19980716 |
| | US 6380197 | B1 | 20020430 | US 2000-484343 | 20000118 |
| PRAI | FR 1997-9186 | | 19970718 | | |
| | WO 1998-FR1545 | | 19980715 | | |

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

FULL ESTIMATED COST

ENTRY

SESSION

107.67

108.28

STN INTERNATIONAL LOGOFF AT 11:22:01 ON 14 NOV 2003

Welcome to STN International! Enter x:x

LOGINID:ssspta1611sxp

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * Welcome to STN International * * * * * * * * *

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NEWS 4 AUG 05 New pricing for EUROPATFULL and PCTFULL effective August 1, 2003
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NEWS 6 AUG 18 Data available for download as a PDF in RDISCLOSURE
NEWS 7 AUG 18 Simultaneous left and right truncation added to PASCAL
NEWS 8 AUG 18 FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation
NEWS 9 AUG 18 Simultaneous left and right truncation added to ANABSTR
NEWS 10 SEP 22 DIPPR file reloaded
NEWS 11 SEP 25 INPADOC: Legal Status data to be reloaded
NEWS 12 SEP 29 DISSABS now available on STN
NEWS 13 OCT 10 PCTFULL: Two new display fields added
NEWS 14 OCT 21 BIOSIS file reloaded and enhanced
NEWS 15 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced

NEWS EXPRESS NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * * * * * STN Columbus * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 11:13:43 ON 14 NOV 2003

=> file reg
COST IN U.S. DOLLARS
FULL ESTIMATED COST

| SINCE FILE ENTRY | TOTAL SESSION |
|------------------|---------------|
| 0.21 | 0.21 |

FILE 'REGISTRY' ENTERED AT 11:13:53 ON 14 NOV 2003
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STRUCTURE FILE UPDATES: 13 NOV 2003 HIGHEST RN 616855-37-9
DICTIONARY FILE UPDATES: 13 NOV 2003 HIGHEST RN 616855-37-9

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=>
Uploading 09903092.5

L1 STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1 STR
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

=> s l1
SAMPLE SEARCH INITIATED 11:14:18 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 8 TO ITERATE

100.0% PROCESSED 8 ITERATIONS 2 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 8 TO 329
PROJECTED ANSWERS: 2 TO 124

L2 2 SEA SSS SAM L1

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FULL SEARCH INITIATED 11:14:25 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 116 TO ITERATE

100.0% PROCESSED 116 ITERATIONS 22 ANSWERS
SEARCH TIME: 00.00.01

L3 22 SEA SSS FUL L1

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| FULL ESTIMATED COST | 148.15 | 148.36 |

FILE 'CAPLUS' ENTERED AT 11:14:31 ON 14 NOV 2003
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FILE COVERS 1907 - 14 Nov 2003 VOL 139 ISS 21
 FILE LAST UPDATED: 13 Nov 2003 (20031113/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13
 L4 2 L3

=> d 14 fbib hitstr abs total

L4 . ANSWER 1 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2000:493531 CAPLUS
 DN 133:120345
 TI Preparation of pyrazinylhydroxyalkyl alkanoates as hypoglycemic agents
 IN Bouchard, Herve; Commercon, Alain
 PA Aventis Pharma, Fr.
 SO PCT Int. Appl., 34 pp.
 CODEN: PIXXD2

DT Patent
 LA French
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|---|----------|-----------------|------------|
| PI | WO 2000042027 | A1 | 20000720 | WO 2000-FR26 | 20000107 |
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HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG,
MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US,
UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | RW: | GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | FR 1999-186 | A 19990111 |
| | FR 2788274 | A1 | 20000713 | FR 1999-186 | 19990111 |

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| FR 2788274 | B1 | 20010209 | | |
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| | | | FR 1999-186 | A 19990111 |
| | | | WO 2000-FR26 | W 20000107 |
| EP 1140861 | A1 | 20011010 | EP 2000-900538 | 20000107 |
| EP 1140861 | B1 | 20030702 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
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| | | | WO 2000-FR26 | W 20000107 |
| BR 2000007449 | A | 20011016 | BR 2000-7449 | 20000107 |
| | | | FR 1999-186 | A 19990111 |
| | | | WO 2000-FR26 | W 20000107 |
| JP 2002534513 | T2 | 20021015 | JP 2000-593595 | 20000107 |
| | | | FR 1999-186 | A 19990111 |
| | | | WO 2000-FR26 | W 20000107 |
| AT 244226 | E | 20030715 | AT 2000-900538 | 20000107 |
| | | | FR 1999-186 | A 19990111 |
| | | | WO 2000-FR26 | W 20000107 |
| NO 2001003416 | A | 20010906 | NO 2001-3416 | 20010710 |
| | | | FR 1999-186 | A 19990111 |
| | | | WO 2000-FR26 | W 20000107 |
| ZA 2001005657 | A | 20021010 | ZA 2001-5657 | 20010710 |
| | | | FR 1999-186 | A 19990111 |
| US 2002077324 | A1 | 20020620 | US 2001-903092 | 20010711 |
| | | | FR 1999-186 | A 19990111 |
| | | | WO 2000-FR26 | A120000107 |

OS MARPAT 133:120345

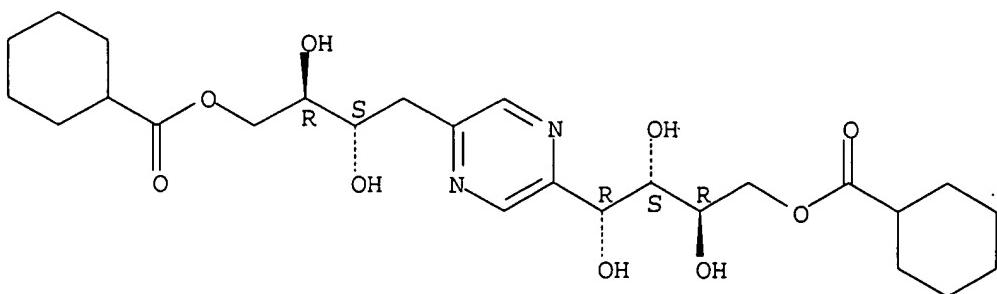
IT 284021-00-7P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of pyrazinylhydroxyalkyl alkanoates as hypoglycemic agents)

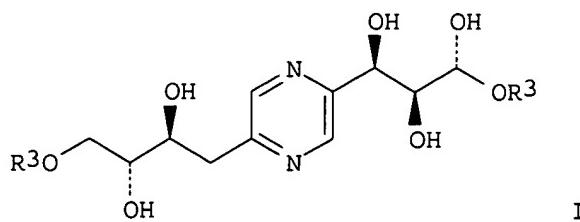
RN 284021-00-7 CAPLUS

CN Cyclohexanecarboxylic acid, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(cyclohexylcarbonyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



GI



AB R₂ZR₁ [I; R₁ = [CH(OH)]₃CH₂O₂CR; R₂ = CH₂[CH(OH)]₂CH₂O₂CR and Z = pyrazine-2,5-diyl; R₂ = CH₂[CH(OH)]₂CH₂O₂CR or [CH(OH)]₃CH₂O₂CR and Z = pyrazine-2,5-diyl; R = cycloalkyl(alkyl)] were prep'd. Thus, polyol II (R₃ = H) was esterified by cyclohexanecarbonyl chloride to give II (R₃ = cyclohexanecarbonyl). Data for biol. activity of I were given.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

| L4 | ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN | | | |
|-----------|---|------|----------|---------------------------|
| AN | 1999:77553 CAPLUS | | | |
| DN | 130:139362 | | | |
| TI | Preparation of polyhydroxyalkylpyrazines as hypoglycemics | | | |
| IN | Bouchard, Herve; Commercon, Alain; Peyronel, Jean-Francois; Terrier, Corinne | | | |
| PA | Rhone-Poulenc Rorer S.A., Fr. | | | |
| SO | PCT Int. Appl., 182 pp. | | | |
| | CODEN: PIXXD2 | | | |
| DT | Patent | | | |
| LA | French | | | |
| FAN.CNT 1 | | | | |
| | PATENT NO. | KIND | DATE | APPLICATION NO. DATE |
| PI | WO 9903843 | A1 | 19990128 | WO 1998-FR1545 19980715 |
| | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| FR | 2766185 | A1 | 19990122 | FR 1997-9186 A 19970718 |
| FR | 2766185 | B1 | 20010615 | FR 1997-9186 19970718 |
| AU | 9888105 | A1 | 19990210 | AU 1998-88105 19980715 |
| | | | | FR 1997-9186 A 19970718 |
| | | | | WO 1998-FR1545 W 19980715 |
| EP | 1001943 | A1 | 20000524 | EP 1998-939679 19980715 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI | | | |
| | | | | FR 1997-9186 A 19970718 |
| | | | | WO 1998-FR1545 W 19980715 |
| JP | 2001510187 | T2 | 20010731 | JP 2000-503068 19980715 |
| | | | | FR 1997-9186 A 19970718 |
| | | | | WO 1998-FR1545 W 19980715 |
| ZA | 9806330 | A | 19990208 | ZA 1998-6330 19980716 |
| | | | | FR 1997-9186 A 19970718 |
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| | | | | FR 1997-9186 A 19970718 |

OS MARPAT 130:139362

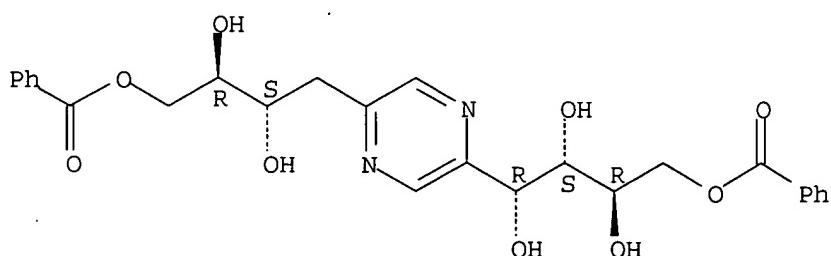
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 220121-95-9P 220121-96-0P 220121-97-1P
 220121-98-2P 220121-99-3P 220122-03-2P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (prepn. of polyhydroxyalkylpyrazines as hypoglycemics)

RN 220121-56-2 CAPLUS

CN 1,2,3,4-Butanetetrol, 1-[5-[(2S,3R)-4-(benzoyloxy)-2,3-dihydroxybutyl]pyrazinyl]-, 4-benzoate, (1R,2S,3R)- (9CI) (CA INDEX NAME)

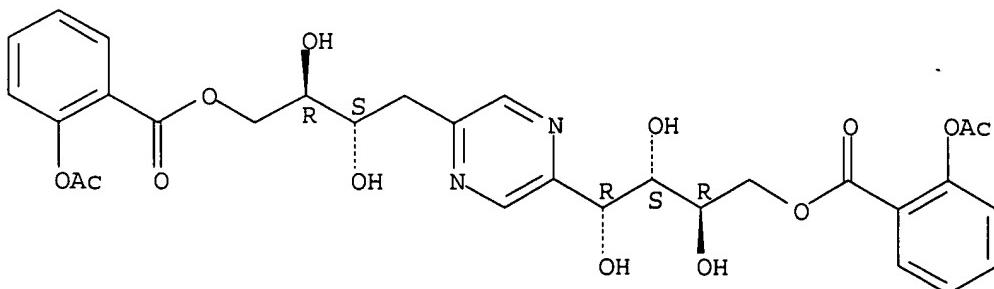
Absolute stereochemistry.



RN 220121-60-8 CAPLUS

CN Benzoic acid, 2-(acetoxy)-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(2-acetoxybenzoyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

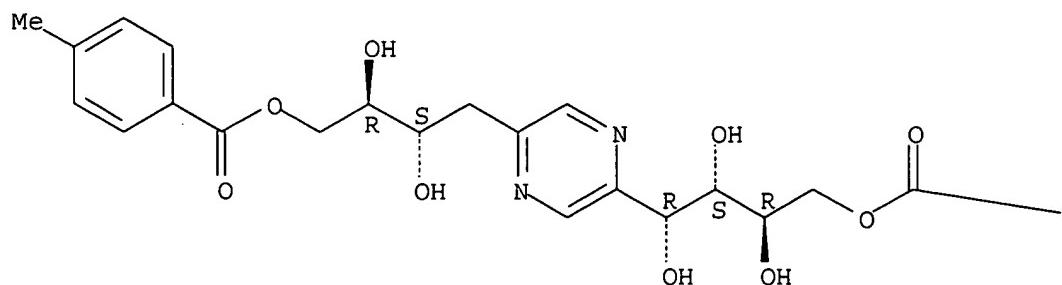


RN 220121-81-3 CAPLUS

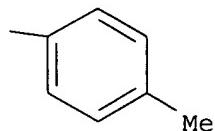
CN Benzoic acid, 4-methyl-, (2R,3S,4R)-4-[5-[(2S,3R)-2,3-dihydroxy-4-[(4-methylbenzoyl)oxy]butyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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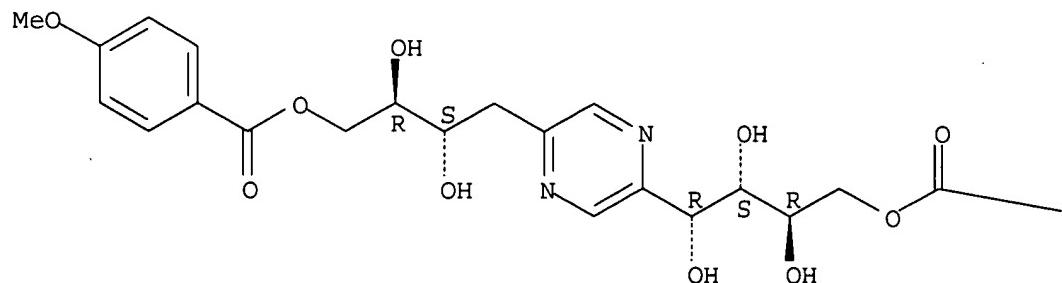


RN 220121-82-4 CAPLUS

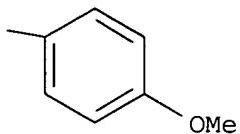
CN Benzoic acid, 4-methoxy-, (2R,3S,4R)-4-[5-[(2S,3R)-2,3-dihydroxy-4-[(4-methoxybenzoyl)oxy]butyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

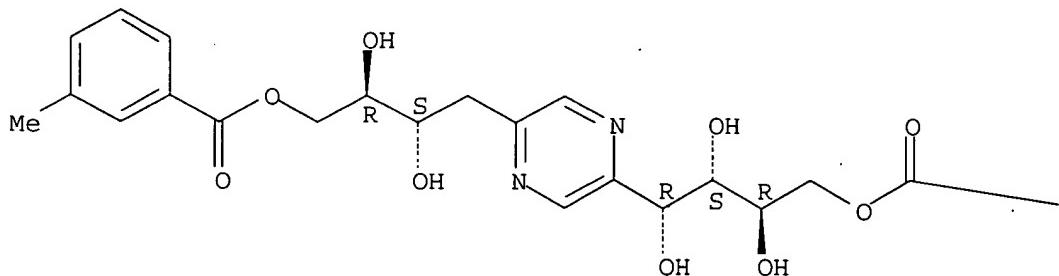


RN 220121-83-5 CAPLUS

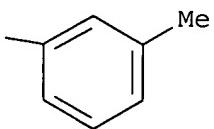
CN Benzoic acid, 3-methyl-, (2R,3S,4R)-4-[5-[(2S,3R)-2,3-dihydroxy-4-[(3-methylbenzoyl)oxy]butyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

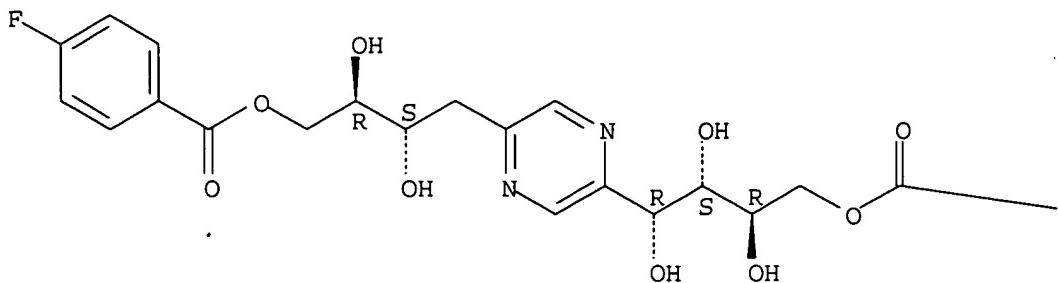


RN 220121-84-6 CAPLUS

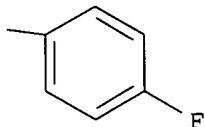
CN Benzoic acid, 4-fluoro-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(4-fluorobenzoyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



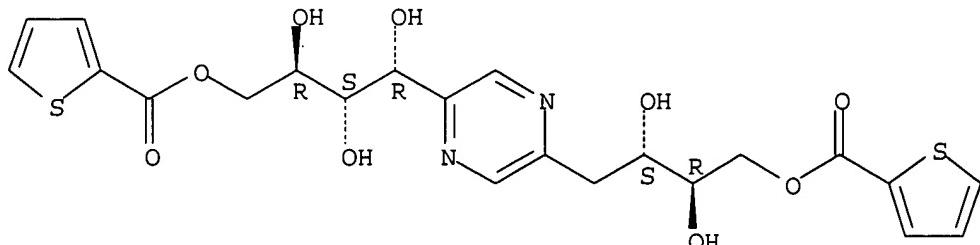
PAGE 1-B



RN 220121-85-7 CAPLUS

CN 2-Thiophenecarboxylic acid, (2R,3S,4R)-4-[5-[(2S,3R)-2,3-dihydroxy-4-[(2-thienylcarbonyl)oxy]butyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

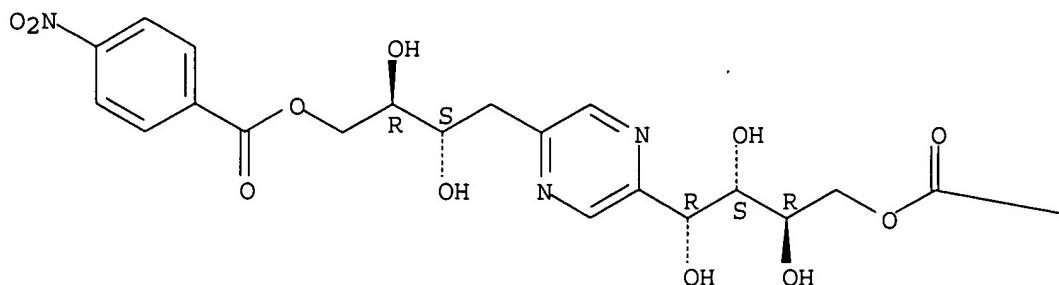


RN 220121-86-8 CAPLUS

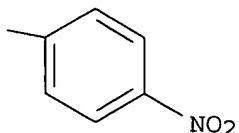
CN 1,2,3,4-Butanetetrol, 1-[5-[(2S,3R)-2,3-dihydroxy-4-[(4-nitrobenzoyl)oxy]butyl]pyrazinyl]-, 4-(4-nitrobenzoate), (1R,2S,3R)- (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

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PAGE 1-B

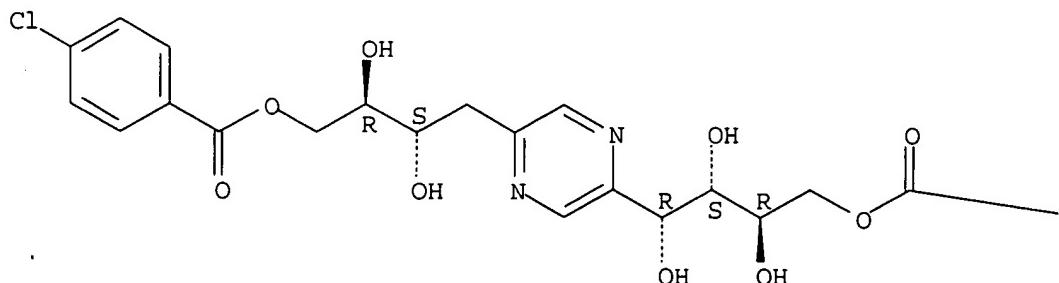


RN 220121-87-9 CAPLUS

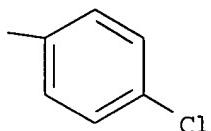
CN Benzoic acid, 4-chloro-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(4-chlorobenzoyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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PAGE 1-B

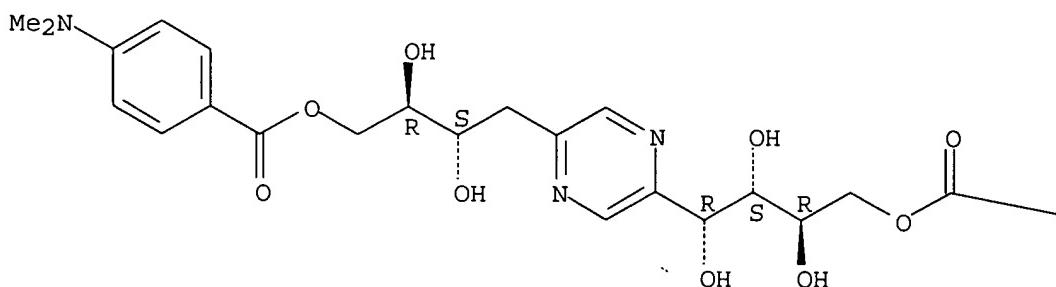


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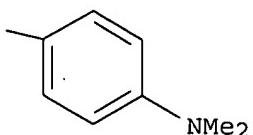
CN Benzoic acid, 4-(dimethylamino)-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(4-(dimethylamino)benzoyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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PAGE 1-B

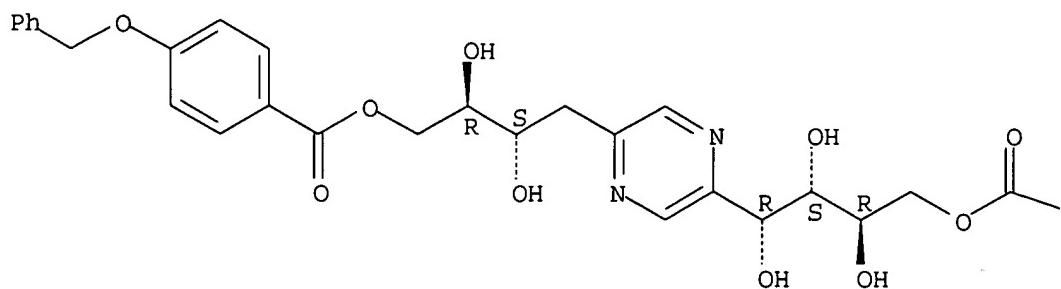


RN 220121-89-1 CAPLUS

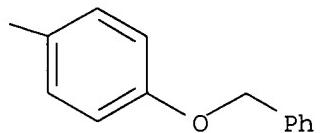
CN Benzoic acid, 4-(phenylmethoxy)-, (2R,3S,4R)-4-[5-[(2S,3R)-2,3-dihydroxy-4-[(4-(phenylmethoxy)benzoyl)oxy]butyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

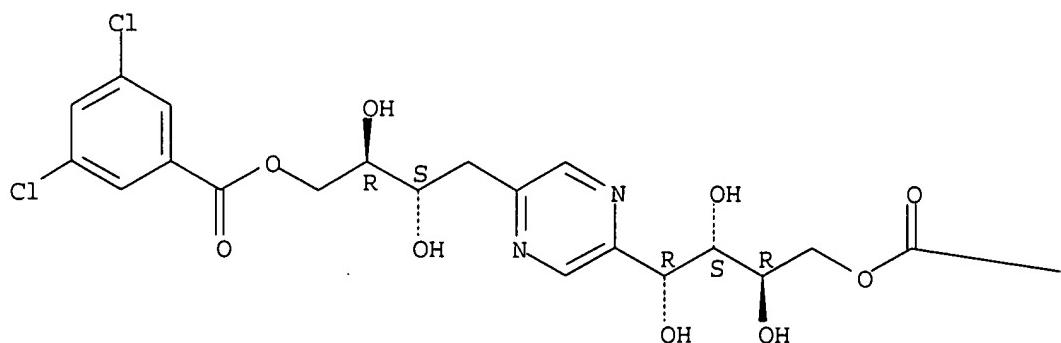


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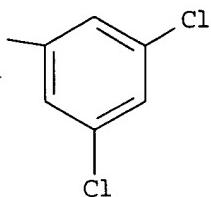
CN Benzoic acid, 3,5-dichloro-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(3,5-dichlorobenzoyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

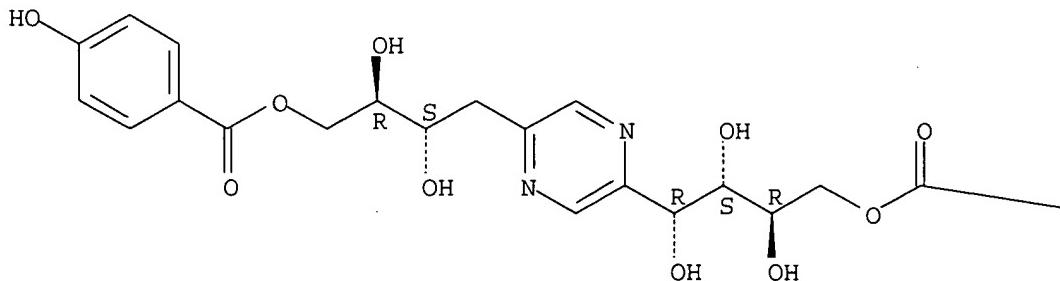


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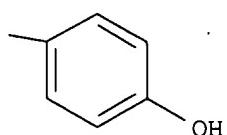
CN Benzoic acid, 4-hydroxy-, (2R,3S,4R)-4-[5-[(2S,3R)-2,3-dihydroxy-4-[(4-hydroxybenzoyl)oxy]butyl]pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

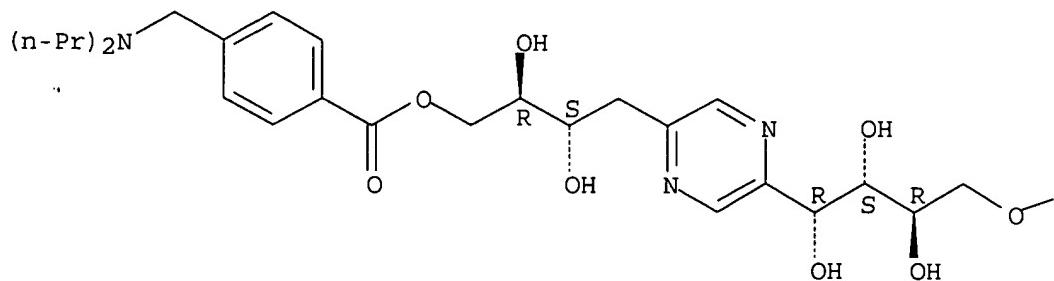


RN 220121-93-7 CAPLUS

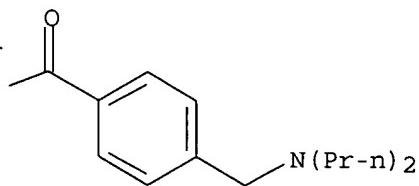
CN Benzoic acid, 4-[(dipropylamino)methyl]-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(dipropylamino)methyl]benzoyl]oxy]-2,3-dihydroxybutyl pyrazinyl]-2,3,4-trihydroxybutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

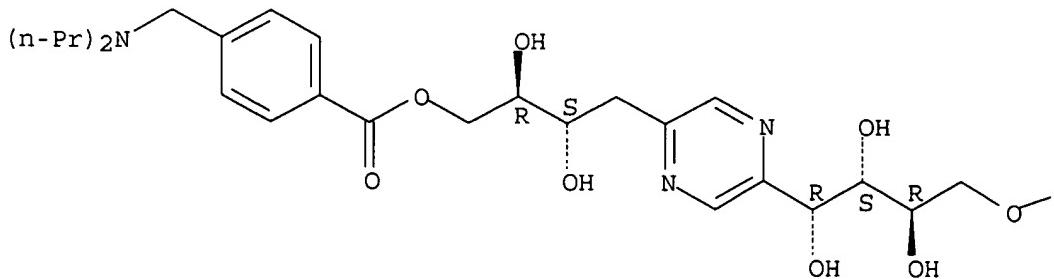


RN 220121-94-8 CAPLUS

CN Benzoic acid, 4-[(dipropylamino)methyl]-, (2R,3S,4R)-4-[5-[(2S,3R)-4-[(4-[(dipropylamino)methyl]benzoyl)oxy]-2,3-dihydroxybutyl]pyrazinyl]-2,3,4-trihydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



● 3 HCl

| | | | | |
|--|----|----------|------------------|----------|
| DE 10059418 | A1 | 20020620 | DE 2000-10059418 | 20001130 |
| AU 2002027931 | A5 | 20020611 | AU 2002-27931 | 20011117 |
| EE 200300183 | A | 20030616 | EE 2003-183 | 20011117 |
| EP 1339675 | A1 | 20030903 | EP 2001-989479 | 20011117 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
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| US 2003013719 | A1 | 20030116 | US 2001-995771 | 20011129 |
| US 6605625 | B2 | 20030812 | | |
| NO 2003002438 | A | 20030709 | NO 2003-2438 | 20030528 |
| PRAI DE 2000-10059418 | | 20001130 | | |
| WO 2001-EP13294 | | 20011117 | | |

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
AN 133:164327 MARPAT
TI Preparation of N-arylsulfonyl-O-[(tetrahydropyrimidinylcarbamoyl)propyl]tyrosine derivatives and analogs as vitronectin .alpha.v.beta.3 receptor inhibitors
IN Peyman, Anuschirwan; Knolle, Jochen; Scheunemann, Karlheinz; Will, David William; Carniato, Denis; Gourvest, Jean-Francois; Gadek, Thomas R.; Bodary, Sarah Catherine
PA Aventis Pharma Deutschland G.m.b.H., Germany; Genentech, Inc.
SO Eur. Pat. Appl., 28 pp.
CODEN: EPXXDW
DT Patent
LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | EP 1028114 | A1 | 20000816 | EP 1999-102916 | 19990213 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO | | | | |
| | WO 2000047564 | A1 | 20000817 | WO 2000-EP895 | 20000204 |
| | W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
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IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ,
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DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
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| | EP 1155003 | A1 | 20011121 | EP 2000-905022 | 20000204 |
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| | JP 2002536438 | T2 | 20021029 | JP 2000-598485 | 20000204 |
| | US 6340679 | B1 | 20020122 | US 2000-502577 | 20000211 |
| PRAI | EP 1999-102916 | | 19990213 | | |
| | WO 2000-EP895 | | 20000204 | | |

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
AN 131:129989 MARPAT
TI Preparation of thiazole compounds as pest control agents and fungicides
IN Iihama, Teruyuki; Miyazawa, Masahiro; Miyahara, Osamu; Marumo, Shinji;

Sano, Shinsuke; Hamamura, Hiroshi; Yokota, Chinami; Kawaguchi, Masahiro;
 PA Takahashi, Hidemitsu; Takagi, Masaie
 SO Nippon Soda Co., Ltd., Japan; et al.
 DT PCT Int. Appl., 60 pp.
 CODEN: PIXXD2

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9940076 | A1 | 19990812 | WO 1999-JP473 | 19990204 |
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DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, KE, KG, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ,
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| | JP 11286488 | A2 | 19991019 | JP 1998-371695 | 19981225 |
| | AU 9922989 | A1 | 19990823 | AU 1999-22989 | 19990204 |
| | JP 2000239264 | A2 | 20000905 | JP 1999-28489 | 19990205 |
| PRAI | JP 1998-24853 | | 19980205 | | |
| | JP 1998-371694 | | 19981225 | | |
| | WO 1999-JP473 | | 19990204 | | |

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 130:139363 MARPAT
 TI Preparation of pyrazinedicarboxamides and analogs as hypoglycemics
 IN Bashiardes, Georges; Carry, Jean-Christophe; Evers, Michel; Filoche,
 Bruno; Mignani, Serge
 PA Rhone-Poulenc Rorer S.A., Fr.
 SO PCT Int. Appl., 100 pp.
 CODEN: PIXXD2

DT Patent

LA French

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| PI | WO 9903844 | A1 | 19990128 | WO 1998-FR1542 | 19980715 |
| | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL,
IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MW, MX, NO, NZ, PL,
RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | FR 2766187 | A1 | 19990122 | FR 1997-9058 | 19970717 |
| | FR 2766187 | B1 | 20000602 | | |
| | AU 9888102 | A1 | 19990210 | AU 1998-88102 | 19980715 |
| | AU 747127 | B2 | 20020509 | | |
| | EP 1001944 | A1 | 20000524 | EP 1998-939676 | 19980715 |
| | EP 1001944 | B1 | 20031001 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI
JP 2001510188 | T2 | 20010731 | JP 2000-503069 | 19980715 |

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|-------------------|----|----------|----------------|----------|
| NZ 501906 | A | 20020426 | NZ 1998-501906 | 19980715 |
| BR 9810880 | A | 20020521 | BR 1998-10880 | 19980715 |
| RU 2194703 | C2 | 20021220 | RU 2000-103449 | 19980715 |
| ZA 9806337 | A | 19990127 | ZA 1998-6337 | 19980716 |
| NO 2000000198 | A | 20000114 | NO 2000-198 | 20000114 |
| US 6399613 | B1 | 20020604 | US 2000-483984 | 20000114 |
| PRAI FR 1997-9058 | | 19970717 | | |
| WO 1998-FR1542 | | 19980715 | | |

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 128:188622 MARPAT
 TI IL-8 receptor antagonists
 IN Bryan, Deborah Lynn; Gleason, John Gerald; Widdowson, Katherine L.
 PA Smithkline Beecham Corporation, USA; Bryan, Deborah Lynn; Gleason, John
 Gerald; Widdowson, Katherine L.
 SO PCT Int. Appl., 44 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | WO 9806398 | A1 | 19980219 | WO 1997-US14582 | 19970815 |
| | W: JP, US | | | | |
| | RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| | EP 939634 | A1 | 19990908 | EP 1997-938426 | 19970815 |
| | R: BE, CH, DE, ES, FR, GB, IT, LI, NL | | | | |
| | JP 2000516620 | T2 | 20001212 | JP 1998-510107 | 19970815 |
| PRAI | US 1996-23972P | | 19960815 | | |
| | WO 1997-US14582 | | 19970815 | | |

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 128:140727 MARPAT
 TI Preparation of substituted piperazinyl-phenyl-oxazolidinone derivatives as
 antibacterial agents
 IN Betts, Michael John; Derbyshire, Catherine Jane
 PA Zeneca Ltd., UK; Betts, Michael John; Derbyshire, Catherine Jane
 SO PCT Int. Appl., 68 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| PI | WO 9801446 | A1 | 19980115 | WO 1997-GB1767 | 19970701 |
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| | PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, | | | | |
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| | GN, ML, MR, NE, SN, TD, TG | | | | |

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| AU 9733520 | A1 | 19980202 | AU 1997-33520 | 19970701 |
| EP 918769 | A1 | 19990602 | EP 1997-929403 | 19970701 |
| R: CH, DE, FR, GB, IT, LI | | | | |
| JP 2000514083 | T2 | 20001024 | JP 1998-504900 | 19970701 |
| ZA 9705953 | A | 19980106 | ZA 1997-5953 | 19970703 |
| PRAI GB 1996-14238 | | 19960706 | | |
| WO 1997-GB1767 | | 19970701 | | |

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 9 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 123:286063 MARPAT
 TI Preparation of vasoconstrictive dihydrobenzopyranpyrimidine derivatives
 IN Van Lommen, Guy Rosalia Eugene; Wigerinck, Piet Tom Bert Paul; De Bruyn, Marcel Frans Leopold; Verschueren, Wim Gaston; Schroven, Marc Francis Josephine
 PA Janssen Pharmaceutica N.V., Belg.
 SO PCT Int. Appl., 50 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9505383 | A1 | 19950223 | WO 1994-EP2703 | 19940812 |
| | W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, US, UZ, VN | | | | |
| | RW: KE, MW, SD, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | | |
| | CA 2168021 | AA | 19950223 | CA 1994-2168021 | 19940812 |
| | AU 9476131 | A1 | 19950314 | AU 1994-76131 | 19940812 |
| | AU 677428 | B2 | 19970424 | | |
| | BR 9407317 | A | 19960416 | BR 1994-7317 | 19940812 |
| | EP 714396 | A1 | 19960605 | EP 1994-926191 | 19940812 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE | | | | |
| | CN 1129451 | A | 19960821 | CN 1994-193152 | 19940812 |
| | CN 1052006 | B | 20000503 | | |
| | HU 74677 | A2 | 19970128 | HU 1996-373 | 19940812 |
| | JP 09501916 | T2 | 19970225 | JP 1994-506752 | 19940812 |
| | RU 2129556 | C1 | 19990427 | RU 1996-105980 | 19940812 |
| | CZ 287771 | B6 | 20010117 | CZ 1996-374 | 19940812 |
| | PL 181385 | B1 | 20010731 | PL 1994-313082 | 19940812 |
| | SK 282402 | B6 | 20020107 | SK 1996-195 | 19940812 |
| | IL 110687 | A1 | 20010319 | IL 1994-110687 | 19940817 |
| | ZA 9406269 | A | 19960219 | ZA 1994-6269 | 19940818 |
| | ZA 9406270 | A | 19960219 | ZA 1994-6270 | 19940818 |
| | US 5824682 | A | 19981020 | US 1996-586760 | 19960130 |
| | FI 9600723 | A | 19960216 | FI 1996-723 | 19960216 |
| | NO 9600649 | A | 19960219 | NO 1996-649 | 19960219 |
| | US 6100268 | A | 20000808 | US 1998-123893 | 19980728 |
| PRAI | EP 1993-202441 | | 19930819 | | |
| | EP 1993-202442 | | 19930819 | | |
| | EP 1993-202443 | | 19930819 | | |
| | EP 1993-202445 | | 19930819 | | |
| | WO 1994-EP2703 | | 19940812 | | |
| | US 1996-586760 | | 19960130 | | |

L6 ANSWER 10 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 117:79637 MARPAT
 TI Nonlinear optical material containing 1,3-diketone derivative
 IN Nakamura, Satoshi; Imahashi, Satoshi
 PA Toyobo Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 04044016 | A2 | 19920213 | JP 1990-153108 | 19900612 |
| PRAI | JP 1990-153108 | | 19900612 | | |

L6 ANSWER 11 OF 11 MARPAT COPYRIGHT 2003 ACS on STN
 AN 109:230806 MARPAT
 TI Preparation of 4-(heterocyclyl)chroman derivatives as cardiovascular agents
 IN Haeusler, Guenther; Gericke, Rolf; Wurziger, Hanns; Baumgarth, Manfred;
 Lues, Inge; De Peyer, Jacques; Bergmann, Rolf
 PA Merck Patent G.m.b.H., Fed. Rep. Ger.
 SO Ger. Offen., 13 pp.
 CODEN: GWXXBX

DT Patent
 LA German

FAN.CNT 6

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|----------|----------|-----------------|----------|
| PI | DE 3726261 | A1 | 19880707 | DE 1987-3726261 | 19870807 |
| | EP 273262 | A2 | 19880706 | EP 1987-118275 | 19871210 |
| | EP 273262 | A3 | 19891206 | | |
| | R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE | | | | |
| | AU 8782689 | A1 | 19880623 | AU 1987-82689 | 19871216 |
| | AU 604809 | B2 | 19910103 | | |
| | HU 48621 | A2 | 19890628 | HU 1987-5958 | 19871222 |
| | HU 207728 | B | 19930528 | | |
| | JP 63170376 | A2 | 19880714 | JP 1987-324247 | 19871223 |
| | JP 2523343 | B2 | 19960807 | | |
| | ZA 8709671 | A | 19880831 | ZA 1987-9671 | 19871223 |
| | US 5387587 | A | 19950207 | US 1991-766725 | 19910927 |
| | US 6040308 | A | 20000321 | US 1994-330957 | 19941028 |
| | US 6153627 | A | 20001128 | US 1995-467962 | 19950606 |
| PRAI | DE 1986-3644094 | 19861223 | | | |
| | DE 1987-3726261 | 19870807 | | | |
| | US 1987-137201 | 19871223 | | | |
| | DE 1988-3815504 | 19880506 | | | |
| | DE 1988-3820506 | 19880616 | | | |
| | DE 1988-3835011 | 19881014 | | | |
| | US 1989-347710 | 19890505 | | | |
| | US 1989-367281 | 19890615 | | | |
| | US 1989-420978 | 19891013 | | | |
| | US 1991-655190 | 19910213 | | | |
| | US 1991-657941 | 19910221 | | | |
| | US 1991-664441 | 19910221 | | | |
| | US 1991-660080 | 19910225 | | | |

| | |
|----------------|----------|
| US 1991-766362 | 19910926 |
| US 1991-766725 | 19910927 |
| US 1994-330957 | 19941028 |

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 11.36 | 161.32 |

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 L2 1 S L1
 L3 31 S L1 SSS FULL

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 S L1

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 L6 11 S L1

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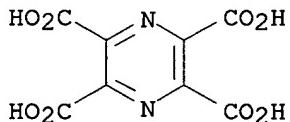
=> s 13

L7 49 L3

=> s 16
L8 11 L6

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L7 ANSWER 1 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2003:707987 CAPLUS
 TI An improved protocol for the ruthenium(pybox)-catalyzed asymmetric alkene epoxidation
 AU Tse, Man Kin; Bhor, Santosh; Klawonn, Markus; Dobler, Christian; Beller, Matthias
 CS Leibniz-Institut fur Organische Katalyse an der Universitat Rostock e.V. (IfOK), Rostock, D-18055, Germany
 SO Tetrahedron Letters (2003), 44(40), 7479-7483
 CODEN: TELEAY; ISSN: 0040-4039
 PB Elsevier Science B.V.
 DT Journal
 LA English
 IT INDEXING IN PROGRESS
 IT 43193-60-8, Pyrazinetetracarboxylic acid
 RL: CAT (Catalyst use); USES (Uses)
 (prepn. of oxiranes via ruthenium(pybox)-catalyzed asym. alkene epoxidn.)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



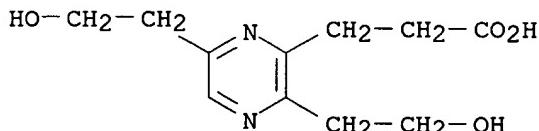
AB A considerable rate enhancement in the ruthenium-catalyzed asym. epoxidn. of olefins in the presence of PhI(OAc)₂ is reported. By the addn. of H₂O, the rate of the reaction was increased by two orders of magnitude. Reactions of both aliph. and arom. olefins were realized for the first time and enantioselectivities up to 71% ee were obtained. In addn. an in situ generation of ruthenium pybox catalysts for faster screening of oxidn. catalysts was also developed. The [2,6-bis[(4S)-4,5-dihydro-4-(1-methylethyl)-2-oxazolyl-.kappa.N3]pyridine-.kappa.N][2,6-pyridinedicarboxylato(2-).kappa.N1,.kappa.O2,.kappa.O6]ruthenium-catalyzed epoxidn. of 1,1'-(1E)-1,2-ethenediylbis[benzene] with bis(acetato-.kappa.O)phenyliodine gave (2R,3R)-rel-2,3-diphenyloxirane (trans-isomer) with one of the enantiomers in 57% enantiomeric excess.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2002:220809 CAPLUS
 DN 136:246468
 TI Process for clavulanic acid purification using molecular imprinted polymers
 IN Mosbach, Klaus; Te, Lei; Yu, Yihua

PA Smithkline Beecham P.L.C., UK
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|---|------------|
| PI WO 2002022846 | A1 | 20020321 | WO 2001-EP10742 | 20010917 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | GB 2000-22841 | A 20000918 |
| AU 2001095569 | A5 | 20020326 | AU 2001-95569 | 20010917 |
| | | | GB 2000-22841 | A 20000918 |
| | | | WO 2001-EP10742W | 20010917 |
| EP 1319086 | A1 | 20030618 | EP 2001-976230 | 20010917 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | GB 2000-22841 | A 20000918 |
| | | | WO 2001-EP10742W | 20010917 |
| IT 96681-85-5D, 3-[3,6-di(2-hydroxyethyl)pyrazin-2-yl]propanoic acid | | | | |
| RL: REM (Removal or disposal); PROC (Process) | | | | |
| | | | (process for clavulanic acid purifn. using mol. imprinted polymers) | |
| RN 96681-85-5 CAPLUS | | | | |
| CN Pyrazinepropanoic acid, 3,6-bis(2-hydroxyethyl)- (9CI) (CA INDEX NAME) | | | | |

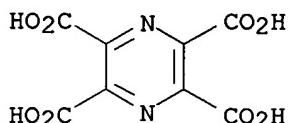


AB A novel process for the removal of impurities from clavulanic acid using a selective adsorption material, in particular a molecularly imprinted polymer. Novel selective adsorption materials suitable for the process, and a process for the prepn. of such selective adsorption materials, are also disclosed. Thus, a methacrylate/ethylene glycol dimethacrylate copolymer were prep'd. contg. succinyl tyrosine and vinylbenzyltriethylammonium chloride. This mol. imprinted polymer was then employed to remove impurities from a clavulanic acid fermn. broth.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:749404 CAPLUS
DN 136:61767
TI X-ray powder structure of a new two-dimensional n
polymer with pyrazine-2,3,5,6-tetracarboxylic aci

AU Alfonso, Montserrat; Neels, Antonia; Stoeckli-Evans, Helen
 CS Institut de Chimie, Universite de Neuchatel, Neuchatel, CH-2000, Switz.
 SO Acta Crystallographica, Section C: Crystal Structure Communications
 (2001), C57(10), 1144-1146
 CODEN: ACSCEE; ISSN: 0108-2701
 PB Munksgaard International Publishers Ltd.
 DT Journal
 LA English
 IT 43193-60-8, 2,3,5,6-Pyrazinetetracarboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with nickel sulfate)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)

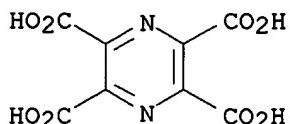


AB The new Ni(II) coordination polymer poly[diaquanickel(II)-.mu.- (pyrazine-2,3,5,6-tetracarboxylato)-tetraquaninickel(II)], $\{[\{\text{Ni}(\text{C}_8\text{N}_2\text{O}_8)(\text{H}_2\text{O})_2\}\text{Ni}(\text{H}_2\text{O})_4]\}_n$, was synthesized and characterized both spectroscopically and crystallog., by x-ray powder diffraction anal. Crystals are triclinic, space group P.hivin.1, with a 6.9892(3), b 7.169(4), c 8.2106(3) .ANG., .alpha. 85.922(3), .beta. 84.242(4), .gamma. 61.818(3).degree.; Z = 1, dc = 2.188; Rp = 0.065, Rwp = 0.086, Rexp = 0.019. NiII ions are bridged by pyrazine-2,3,5,6-tetracarboxylic acid, coordinating in a bis-bidentate manner, so forming 1-dimensional polymeric chains. The chains are linked by a 2nd NiII ion, via an O atom of the coordinated carboxylate group, giving a two-dimensional layer-like polymer. The remaining coordination sites of the two independent octahedral NiII ions are occupied by H2O mols. The layers are connected via H bonds involving all six coordinated H2O mols.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2001:39791 CAPLUS
 DN 134:280480
 TI Cooperative assistance in a very short O-H.cntdot..cntdot..cntdot.O hydrogen bond. Low-temperature x-ray crystal structures of 2,3,5,6-pyrazinetetracarboxylic and related acids
 AU Vishweshwar, Peddy; Nangia, Ashwini; Lynch, Vincent M.
 CS School of Chemistry, University of Hyderabad, Hyderabad, 500 046, India
 SO Chemical Communications (Cambridge) (2001), (2), 179-180
 CODEN: CHCOFS; ISSN: 1359-7345
 PB Royal Society of Chemistry
 DT Journal
 LA English
 IT 43193-60-8, 2,3,5,6-Pyrazinetetracarboxylic acid
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
 (crystallog.; low-temp. x-ray crystal structures of

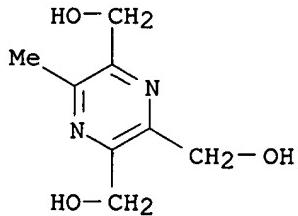
2,3,5,6-pyrazinetetracarboxylic and related acids and cooperative assistance in very short O-H..O hydrogen bond)
RN 43193-60-8 CAPLUS
CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB In contrast to the well documented role of charge- and resonance-assistance in very short H bonds, a very short O-Hacid..Owater H bond [O..O 2.4791(13) .ANG.] in the title acid is ascribed to the cumulative stabilization from .sigma.- and .pi.-bond cooperativity.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1997:89553 CAPLUS
DN 126:141592
TI Studies on the metabolites of tetramethylpyrazine in human urine
AU Ye, Yunpeng; Wang, Shizhen; Jiang, Ji
CS Beijing Union Hosp., Beijing, 100730, Peop. Rep. China
SO Zhongguo Yixue Kexueyuan Xuebao (1996), 18(4), 288-291
CODEN: CIHPDR; ISSN: 1000-503X
PB Zhongguo Yixue Kexueyuan
DT Journal
LA Chinese
IT 186534-03-2
RL: ANT (Analyte); ANST (Analytical study)
(detn. of tetramethylpyrazine in urine by gas chromatog. and mass spectroscopy)
RN 186534-03-2 CAPLUS
CN Pyrazinetrimethanol, 6-methyl- (9CI) (CA INDEX NAME)

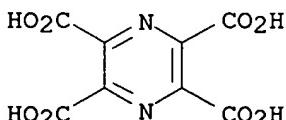


AB The metabolites of tetramethylpyrazine (TMP) in human urine was studied by GC/MS after oral administration. Three metabolites were found in the water sol. acidic fraction of the urine and the main metabolite was identified to be 3,5,6-trimethylpyraaine carboxylic acid.

L7 ANSWER 6 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1996:509320 CAPLUS

DN 125:151127
 TI Crosslinked acidic polysaccharides and their uses
 IN Nguyen, Tuyen Thanh
 PA Hercules Inc., USA
 SO Eur. Pat. Appl., 14 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|------------------|----------|
| PI | EP 718312 | A2 | 19960626 | EP 1995-120277 | 19951221 |
| | EP 718312 | A3 | 19970115 | | |
| | R: AT, BE, CH, DE, DK, GB, IE, IT, LI, NL, PT, SE | | | US 1994-362689 A | 19941222 |
| | US 5690961 | A | 19971125 | US 1994-362689 | 19941222 |
| | CA 2165890 | AA | 19960623 | CA 1995-2165890 | 19951221 |
| | | | | US 1994-362689 A | 19941222 |
| | AU 9540634 | A1 | 19960627 | AU 1995-40634 | 19951221 |
| | AU 697534 | B2 | 19981008 | | |
| | | | | US 1994-362689 A | 19941222 |
| | BR 9505996 | A | 19971223 | BR 1995-5996 | 19951221 |
| | | | | US 1994-362689 A | 19941222 |
| | CN 1131675 | A | 19960925 | CN 1995-119494 | 19951222 |
| | | | | US 1994-362689 A | 19941222 |
| | JP 08253504 | A2 | 19961001 | JP 1995-334949 | 19951222 |
| | | | | US 1994-362689 A | 19941222 |
| IT | 43193-60-8 , Pyrazine-2,3,5,6-tetracarboxylic acid | | | | |
| | RL: CAT (Catalyst use); USES (Uses) | | | | |
| | (polyanhydrides and polycarboxylic acids for crosslinking | | | | |
| | polysaccharides) | | | | |
| RN | 43193-60-8 CAPLUS | | | | |
| CN | Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME) | | | | |



AB Acidic polysaccharides are crosslinked by reaction with di- or polyanhydrides. The use of anhydride-crosslinked hyaluronic acid as a treatment for arthritis, as a drug delivery vehicle, to reduce the incidence of post-operative adhesion formation, to promote the healing of chronic wounds and ulcers, as a component of cosmetic formulations are claimed.

L7 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1995:620122 CAPLUS

DN 123:40723

TI Preparation of pyrazinecarboxylic acid derivatives for skin-lightening cosmetics

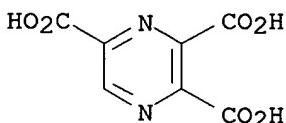
IN Ishikawa, Takaharu; Tsutsui, Koichi

PA Sankodo Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| PI | JP 07097310 | A2 | 19950411 | JP 1993-243193 | 19930929 |
| | JP 3251107 | B2 | 20020128 | JP 1993-243193 | 19930929 |
| OS | MARPAT 123:40723 | | | | |
| IT | 23046-95-9P, 2,3,5-Pyrazinetricarboxylic acid | | | | |
| | RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (skin-lightening cosmetics contg. pyrazinecarboxylic acid derivs.) | | | | |
| RN | 23046-95-9 CAPLUS | | | | |
| CN | Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME) | | | | |

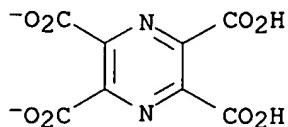


AB The title cosmetics contain pyrazine derivs. The pyrazine derivs. are stable in cosmetic formulation and generate no malodor. They significantly lightened the color of B-16 melanoma cells. Skin-lightening lotion, cream, and pack contg. these derivs. were prep'd.

L7 ANSWER 8 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1994:472393 CAPLUS
 DN 121:72393
 TI Coordination polymers of Mn(II) with the ligand pyrazine-2,3,5,6-tetracarboxylic acid
 AU Marioni, Pierre-Alain; Marty, Werner; Stoeckli-Evans, Helen; Whitaker, Claire
 CS Institut de Chimie, Universite de Neuchatel, Avenue de Bellevaux 51, Neuchatel, CH-2000, Switz.
 SO Inorganica Chimica Acta (1994), 219(1-2), 161-8
 CODEN: ICHAA3; ISSN: 0020-1693
 DT Journal
 LA English
 IT 156367-78-1P, Hexaaquamanganese(2+) pyrazine-2,3,5,6-tetracarboxylate(2-)
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. and crystal structure of)
 RN 156367-78-1 CAPLUS
 CN Manganese(2+), hexaaqua-, (OC-6-11)-, pyrazinetetracarboxylate (1:1) (9CI) (CA INDEX NAME)

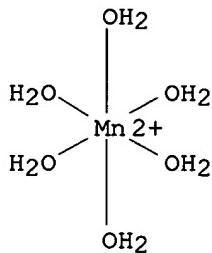
CM 1

CRN 156367-77-0
 CMF C8 H2 N2 O8

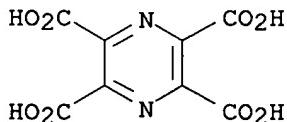


CM 2

CRN 15365-82-9
 CMF H12 Mn O6
 CCI CCS



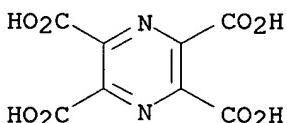
IT 43193-60-8, Pyrazine-2,3,5,6-tetracarboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with manganese and zinc salts alone and in presence of
 potassium ion)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB Two coordination polymers of Mn(II) with the ligand pyrazine-2,3,5,6-tetracarboxylic acid (H₄pztc) were prep'd. The reaction of MnSO₄ with H₄pztc (ratio 1:1) carried out at 50.degree. gave {[Mn(H₂pztc)(H₂O)₂].cntdot.2H₂O}.infin., a zigzag polymer structure with the ligand coordinated in a pseudo bis(tridentate) fashion (1) (crystal data: C₈H₁₀N₂O₁₂Mn, tetragonal, space group I41/a, a = b 13.934(1), c 13.578(1) .ANG., Z = 8, 1670 reflections with I>3.sigma.(I), R = 0.029). The reaction of an excess of MnSO₄ with H₄pztc (ratio 3:1) at room temp. gave [Mn(H₂O)₆][H₂pztc] (2) (crystal data: C₈H₁₄N₂O₁₄Mn, monoclinic, space group A2/n, a 6.83(1), b 9.918(1), c 22.051(2) .ANG., .beta. 102.91(2).degree., Z = 4, 1547 reflections with I>3.sigma.(I), R = 0.026). The anion possesses a strong intramol. H bond and is found coordinated to the Mn atom in polymer 1. The reaction of MnSO₄ with H₄pztc (ratio 1:1) carried out at 50.degree. in the presence of the equimolar buffer AcOK/AcOH, gave {K₂[Mn(pztc)(H₂O)]}.cntdot.2.25H₂O}.infin., a column type

polymer with the ligand coordinated in a mono(tridentate)-bis(monodentate) fashion (3) (crystal data: C8H7N2O11.25K2Mn, monoclinic, space group I2/a, a 18.207(2), b 8.335(1), c 19.185(3) .ANG., .beta. 103.66(1).degree., Z = 8, 1539 reflections with I>2.sigma.(I), R = 0.041). The reaction of H4pztc with ZnCl₂ (ratio 1:1) in the presence of the same equimolar buffer soln. give the isomorphous polymer Zn-3 (crystal data: C8H7N2O11.25K2Zn, monoclinic, space group I2/a, a 18.194(1), b 8.264(1), c 18.924(1) .ANG., .beta. 103.92(1).degree., Z = 8, 2567 reflections with I>3.sigma.(I), R = 0.031).

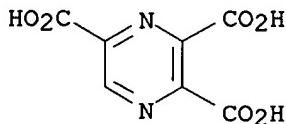
L7 ANSWER 9 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1993:685043 CAPLUS
 DN 119:285043
 TI Coordination polymers of copper(II) with the ligand pyrazine-2,3,5,6-tetracarboxylic acid
 AU Graf, Marion; Stoeckli-Evans, Helen; Whitaker, Claire; Marioni, Pierre Alain; Marty, Werner
 CS Inst. Chim., Univ. Neuchatel, Neuchatel, CH-2000, Switz.
 SO Chimia (1993), 47(6), 202-5
 CODEN: CHIMAD; ISSN: 0009-4293
 DT Journal
 LA English
 IT **43193-60-8**, Pyrazine-2,3,5,6-tetracarboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with cupric chloride in cesium or magnesium acetate buffers with acetic acid)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB The ligand pyrazine-2,3,5,6-tetracarboxylic acid in the presence of CuCl₂ and the buffers AcOX/AcOH, X = K+, Rb+, Cs+ and (AcO)₂Mg/AcOH, forms 2 quite different types of coordination polymers. With the monovalent K+, Rb+, or Cs+ buffer an almost right-angled dimeric unit is formed which polymerizes to form a zig-zag polymer {Cs₄[Cu₂(pztc)₂(H₂O)₂]_nH₂O}.infin. (1). This dimerizes about a center of symmetry to form a 2-dimensional polymer sheet. With the divalent Mg²⁺ buffer a mononuclear unit polymerizes to form a quasi-linear polymer {Mg(H₂O)₆[Cu(pztc)(H₂O)₂]_nH₂O}.infin. (2). The x-ray crystal structures of 1 and 2 indicate that the Cu-atom exists in 2 quite different coordination environments (NO₃ square pyramidal for 1 and N₂O₂, square planar for 2) and that the Cu-N(pyrazine) bond distances are much longer than normal.

L7 ANSWER 10 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1992:93836 CAPLUS
 DN 116:93836
 TI Electrochemical behavior of 2,3,5-pyrazinetetricarboxylic acid at DME
 AU Rao, P. Prabhakara; Swamy, P. Yadagiri; Veerabhadram, G.; Sastry, K. S.
 CS Coll. Sci., Osmania Univ., Hyderabad, 500 007, India
 SO Bulletin of Electrochemistry (1991), 7(7), 329-30

DT CODEN: BUELE6; ISSN: 0256-1654
 LA Journal
 IT English
 IT 23046-95-9, Pyrazinetricarboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (redn. of, polarog., in various pH buffered solns.)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



AB The polarog. behavior of 2,3,5-pyrazinetricarboxylic acid was studied in buffer solns. of various pH values. The polarog. wave is irreversible and diffusion controlled. The limiting current is found to decrease whereas the half-wave potential is shifted to more neg. values with the increase in the pH of the buffer soln. The kinetic parameters have been deduced using Meites-Israel method and a probable mechanism consistent with the obsd. results is discussed.

L7 ANSWER 11 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1991:101739 CAPLUS
 DN 114:101739
 TI Preparation of heterocyclic medical chelating agents and chelates
 IN Almen, Torsten; Berg, Arne; Dugstad, Harald; Klaveness, Jo; Krautwurst, Klaus Dieter; Rongved, Pal
 PA Cockbain, Julian Roderick Michaelson, UK; Nycomed A/S
 SO PCT Int. Appl., 53 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| PI | WO 9008138 | A1 | 19900726 | WO 1990-EP79 | 19900115 |
| | W: AU, CA, FI, GB, JP, NO, US | | | GB 1989-719 | 19890113 |
| | RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE | | | CA 1990-2045539 | 19900115 |
| | | | | GB 1989-719 | 19890113 |
| | CA 2045539 | AA | 19900714 | AU 1990-49573 | 19900115 |
| | AU 9049573 | A1 | 19900813 | | |
| | AU 646795 | B2 | 19940310 | GB 1989-719 | 19890113 |
| | | | | WO 1990-EP79 | 19900115 |
| | EP 452392 | A1 | 19911023 | EP 1990-901813 | 19900115 |
| | EP 452392 | B1 | 19950412 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE | | | GB 1989-719 | 19890113 |
| | | | | WO 1990-EP79 | 19900115 |
| | JP 04502619 | T2 | 19920514 | JP 1990-502171 | 19900115 |
| | JP 2953670 | B2 | 19990927 | GB 1989-719 | 19890113 |

| | | | | |
|------------|----|----------|----------------|----------|
| AT 121079 | E | 19950415 | WO 1990-EP79 | 19900115 |
| | | | AT 1990-901813 | 19900115 |
| | | | GB 1989-719 | 19890113 |
| ES 2071089 | T3 | 19950616 | ES 1990-901813 | 19900115 |
| | | | GB 1989-719 | 19890113 |
| NO 9102749 | A | 19910712 | NO 1991-2749 | 19910712 |
| NO 177783 | B | 19950814 | | |
| NO 177783 | C | 19951122 | GB 1989-719 | 19890113 |
| | | | WO 1990-EP79 | 19900115 |
| FI 96416 | B | 19960315 | FI 1991-3388 | 19910712 |
| FI 96416 | C | 19960625 | | |
| | | | GB 1989-719 | 19890113 |
| | | | WO 1990-EP79 | 19900115 |
| US 5348954 | A | 19940920 | US 1991-690975 | 19910724 |
| | | | GB 1989-719 | 19890113 |
| | | | WO 1990-EP79 | 19900115 |
| US 5439668 | A | 19950808 | US 1994-235882 | 19940502 |
| | | | GB 1989-719 | 19890113 |
| | | | US 1991-690975 | 19910724 |

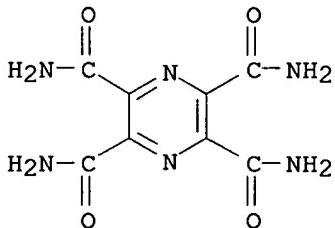
OS MARPAT 114:101739

IT 22051-80-5, Pyrazinetetracarboxamide

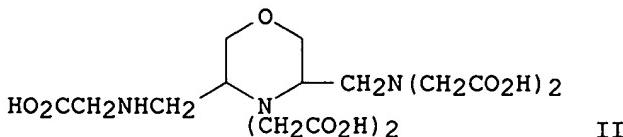
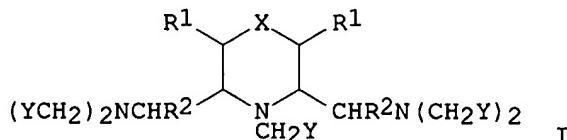
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in prepn. of medical chelating agent)

RN 22051-80-5 CAPLUS

CN Pyrazinetetracarboxamide (9CI) (CA INDEX NAME)



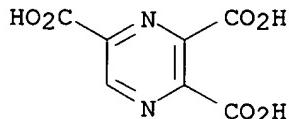
GI



AB Title compds. I [X = bond, O, S, R1HC, R3N, R1, R2 = H, (substituted) alkyl, alkoxyalkyl; R3 = H, mono-, polyhydroxylated alkyl, etc.; Y =

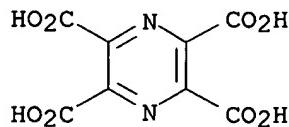
hydroxycarbamoyl, COZ; Z = (substituted) morpholino, etc.] useful as diagnostic, therapeutic, detoxification, imaging, or radiotherapy agents (no data), are prepd. Thus, title compd. II, prepd. starting from 3-carboxamido-5-cyano-4-benzylmorpholine via 3,5-bis(aminomethyl)morpholine, was reacted with Gd2O3 in the presence of NaOH to give the 2Na salt of the Gd(III) chelate of II. Pharmaceutical formulations contg. I salts and chelates are given.

L7 ANSWER 12 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1990:505266 CAPLUS
 DN 113:105266
 TI Comparison of the kinetics of anodization of zirconium in pyrazinecarboxylic acids
 AU Rao, M. Bhaskara; Sastry, K. S.
 CS Dep. Chem., Osmania Univ., Hyderabad, 500 007, India
 SO Transactions of the SAEST (1990), 25(1-2), 33-5
 CODEN: TSETA6; ISSN: 0036-0678
 DT Journal
 LA English
 IT 23046-95-9, 2,3,5-Pyrazinetetricarboxylic acid
 RL: PRP (Properties)
 (zirconium anodization in soln. contg.)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



AB The kinetics of anodization of Zr in 0.01M 2-pyrazine monocarboxylic acid, 2,3-pyrazine dicarboxylic acid and 2,3,5-pyrazine tricarboxylic acids were studied at a const. c.d. of 4mA/cm² and at room temp. The formation rate and the current efficiency are found to decrease while the differential field is found to increase with the increase in no. of carboxylic acid groups. Thickness ests. were made from the capacitance data.

L7 ANSWER 13 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1990:139262 CAPLUS
 DN 112:139262
 TI Titanocene and zirconocene complexes with pyrazinetetracarboxylate ligands
 AU Guethner, Thomas; Thewalt, Ulf
 CS Sekt. Roentgen- Elektronenbeugung, Univ. Ulm, Ulm, D-7900, Fed. Rep. Ger.
 SO Journal of Organometallic Chemistry (1989), 371(1), 43-56
 CODEN: JORCAI; ISSN: 0022-328X
 DT Journal
 LA German
 OS CASREACT 112:139262
 IT 125750-33-6, Tetrasodium pyrazinetetracarboxylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactions of, with titanocene and zirconocenedichlorides)
 RN 125750-33-6 CAPLUS
 CN Pyrazinetetracarboxylic acid, tetrasodium salt (9CI) (CA INDEX NAME)



● 4 Na

AB The reaction of titanocene dichloride with tetrasodium pyrazinetetracarboxylate in the two-phase system of water/CHCl₃ gives the tetrานuclear complex [Cp₂Ti(C₈N₂O₈)TiCp₂]₂ (I) which can be isolated as the hydrate [Cp₂Ti(C₈N₂O₈)TiCp₂].cntdot.12H₂O or the cryst. solvate [Cp₂Ti(C₈N₂O₈)TiCp₂]₂.cntdot.2H₂O.cntdot.2CHCl₃.cntdot.3CH₃NO₂ from an appropriate mixt. of solvents. Two of the titanium atoms in I are pentacoordinate (Cp₂TiO₂N arrangement) and the other two are tetracoordinate (Cp₂TiO₂ arrangement). The pyrazinetetracarboxylate(4-) anions act as (3 + 1 + 1)-denate ligands. The heterometallic complex [Cp₂Ti(C₈N₂O₈)ZrCp₂]₂ (II) which crystallizes as the solvate [Cp₂Ti(C₈N₂O₈)ZrCp₂]₂.cntdot.CH₃NO₂.cntdot.6CHCl₃ is isostructural with I. The reaction of equimolar amts. of Cp₂TiCl₂ and Cp₂ZrCl₂ with tetrasodium pyrazinetetracarboxylate gives II. The Zr atoms in II occupy the pentacoordinate positions whereas the Ti atoms occupy the tetracoordinate positions. I reacts with aq. hydrochloric acid to give the pentacoordinate mononuclear complex Cp₂Ti(C₈H₂N₂O₈) (III) which crystallizes as the solvate Cp₂Ti(C₈H₂N₂O₈).cntdot.2H₂O.cntdot.CH₃NO₂. The crystal structures of I, II, III have been detd. by x-ray diffraction.

L7 ANSWER 14 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1990:139054 CAPLUS

DN 112:139054

TI Preparation of heterocyclic tetracarboxylic acids as materials for dyes, drugs, agrochemicals, and polymers

IN Horiuchi, Kenichiro; Matsumoto, Mansuke

PA Yamamoto Kasei K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|-------------|------|----------|-----------------|----------|
| PI | JP 01246261 | A2 | 19891002 | JP 1988-72874 | 19880325 |
| | JP 2516396 | B2 | 19960724 | | |
| | | | | JP 1988-72874 | 19880325 |

OS MARPAT 112:139054

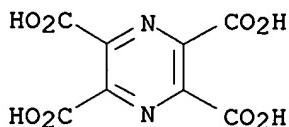
IT 43193-60-8P, Pyrazinetetracarboxylic acid

RL: SPN (Synthetic preparation); PREP (Preparation)

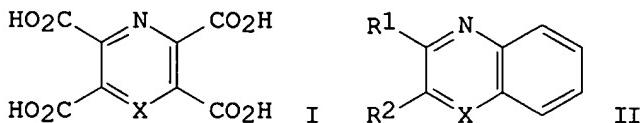
(prepn. of, as material for dyes, drugs, agrochems., and polymers)

RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



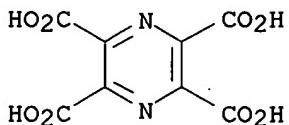
GI



AB The title compds. I ($X = \text{CH, N}$) are prep'd. by oxidn. of quinolines or quinoxalines II ($R1, R2 = \text{alkyl}$; $R1$ and $R2$ may be bonded to form cycloalkene or benzene ring; $R1, R2$ and benzene ring may have nonreactive substituents) in presence of RuO_4 under basic conditions. Thus, a soln. of phenazine in CCl_4 was stirred with aq. NaOH , RuCl_3 , and NaOCl at 30-35.degree. for 48 h to give 33.9% I.2H₂O ($X = \text{N}$).

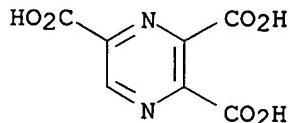
L7 ANSWER 15 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1987:138831 CAPLUS
 DN 106:138831
 TI Pyridine-acetic anhydride initiated polymerization of some heterocyclic acids
 AU Wiley, Richard H.
 CS Palo Alto, CA, 94306, USA
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1987), 25(2), 735-7
 CODEN: JPACEC; ISSN: 0887-624X
 DT Journal
 LA English
 IT 107502-10-3P 107502-13-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and characterization of)
 RN 107502-10-3 CAPLUS
 CN Pyrazinetetracarboxylic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 43193-60-8
CMF C8 H4 N2 O8

RN 107502-13-6 CAPLUS
 CN Pyrazinetetricarboxylic acid, homopolymer (9CI) (CA INDEX NAME)

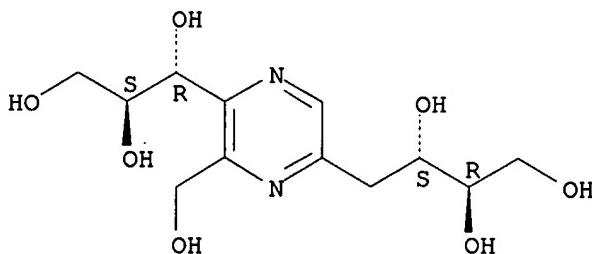
CM 1

CRN 23046-95-9
CMF C7 H4 N2 O6

AB Polymn. of quinolinic, pyrimidine-4,5-dicarboxylic, and pyrazine-2,3-di-, tri-, and tetracarboxylic acids in the presence of pyridine [110-86-1] and Ac₂O [108-24-7] at 135.degree. yielded poly(azino- or diazinocyclopent-4-ene-1-one-2,3-diyldenes) and their polymeric semidione and dienol forms. The products were black, insol. powders and were inhibitors for vinyl polymn.

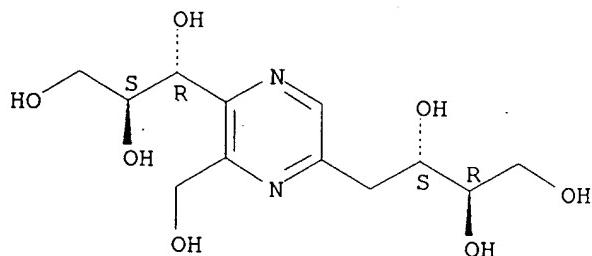
L7 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1986:570812 CAPLUS
 DN 105:170812
 TI Identification of novel non-volatile pyrazines in commercial caramel colors
 AU Tsuchida, Hironobu; Morinaka, Keizo; Fujii, Satoshi; Komoto, Masahiko; Mizuno, Susumu
 CS Dep. Agric. Chem., Univ. Kobe, Kobe, 657, Japan
 SO Developments in Food Science (1986), 13(Amino-Carbonyl React. Food Biol. Syst.), 85-94
 CODEN: DFSCDX; ISSN: 0167-4501
 DT Journal
 LA English
 IT 104670-20-4 104670-21-5 104670-31-7
 104670-34-0 104670-37-3 104670-38-4
 104696-24-4
 RL: BIOL (Biological study)
 (of ammonia caramel color)
 RN 104670-20-4 CAPLUS
 CN 1,2,3-Butanetriol, 4-[6-(hydroxymethyl)-5-(1,2,3-trihydroxypropyl)pyrazinyl]-, [2R-[2R*,3S*(1R*,2S*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1986:570812 CAPLUS
 DN 105:170812
 TI Identification of novel non-volatile pyrazines in commercial caramel colors
 AU Tsuchida, Hironobu; Morinaka, Keizo; Fujii, Satoshi; Komoto, Masahiko; Mizuno, Susumu
 CS Dep. Agric. Chem., Univ. Kobe, Kobe, 657, Japan
 SO Developments in Food Science (1986), 13(Amino-Carbonyl React. Food Biol. Syst.), 85-94
 CODEN: DFSCDX; ISSN: 0167-4501
 DT Journal
 LA English
 IT 104670-20-4 104670-21-5 104670-31-7
 104670-34-0 104670-37-3 104670-38-4
 104696-24-4
 RL: BIOL (Biological study)
 (of ammonia caramel color)
 RN 104670-20-4 CAPLUS
 CN 1,2,3-Butanetriol, 4-[6-(hydroxymethyl)-5-(1,2,3-trihydroxypropyl)pyrazinyl]-, [2R-[2R*,3S*(1R*,2S*)]]- (9CI) (CA INDEX NAME)

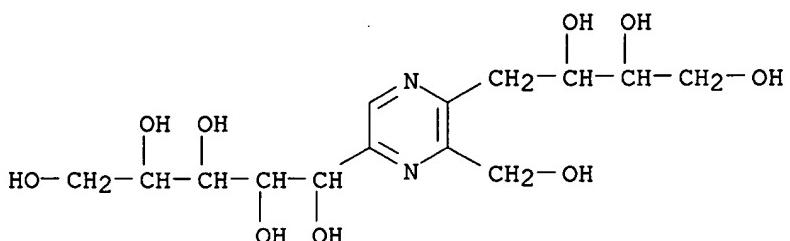
Absolute stereochemistry.



Patel

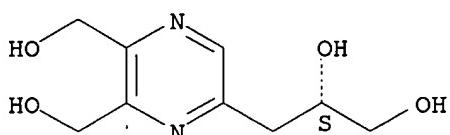
<11/18/2003>

RN 104670-21-5 CAPLUS
 CN Pentitol, 1-C-[6-(hydroxymethyl)-5-(2,3,4-trihydroxybutyl)pyrazinyl]-
 (9CI) (CA INDEX NAME)



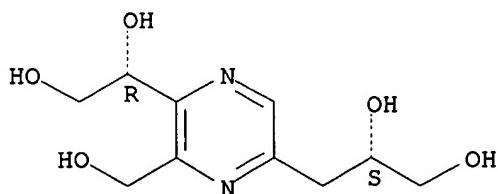
RN 104670-31-7 CAPLUS
 CN 2,3-Pyrazinedimethanol, 5-(2,3-dihydroxypropyl)-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



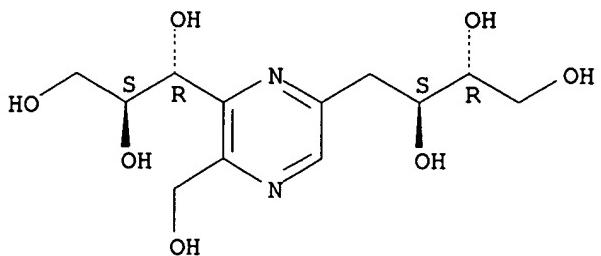
RN 104670-34-0 CAPLUS
 CN 2,3-Pyrazinedimethanol, 5-(2,3-dihydroxypropyl)-.alpha.2-(hydroxymethyl)-, [R-(R*,S*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

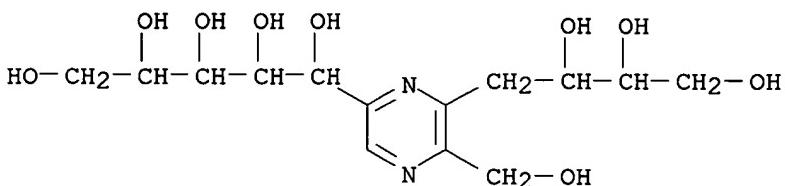


RN 104670-37-3 CAPLUS
 CN 1,2,3-Butanetriol, 4-[5-(hydroxymethyl)-6-(1,2,3-trihydroxypropyl)pyrazinyl]-, [1R-[1R*(2R*,3S*),2S*]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



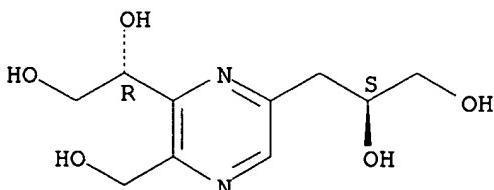
RN 104670-38-4 CAPLUS

CN Pentitol, 1-C-[5-(hydroxymethyl)-6-(2,3,4-trihydroxybutyl)pyrazinyl]-
(9CI) (CA INDEX NAME)

RN 104696-24-4 CAPLUS

CN 2,3-Pyrazinedimethanol, 5-(2,3-dihydroxypropyl)-.alpha.3-(hydroxymethyl)-,
[R-(R*,S*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



AB Gas chromatog.-mass-spectrometric analyses of trimethylsilyl derivs. of the nonvolatile pyrazine fraction obtained by an ion exchange method demonstrated the presence of 25 polyhydroxyalkylpyrazines in an ammonia caramel color and of 17 polyhydroxyalkylpyrazines in a sulfite-ammonia caramel color. Three novel nonvolatile pyrazines of the latter were isolated by preparative ion exchange- and paper chromatog., and identified as 2-tetrahydroxybutyl-6-(3',4'-dihydroxy-1'-butenyl)pyrazine [104670-24-8], 2-(2',3'-dihydroxytetrahydrofuran-2-yl)-6-(2',3',4'-trihydroxybutyl)pyrazine [104670-25-9] and 2-tetrahydroxybutyl-6-(2',3'-dihydroxytetrahydrofuran-2-yl)pyrazine [104696-21-1]. A possible formation pathway of the novel pyrazines was proposed.

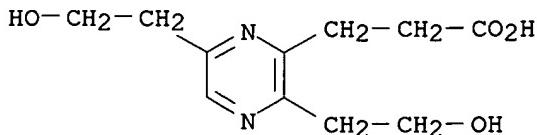
L7 ANSWER 17 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1985:225908 CAPLUS

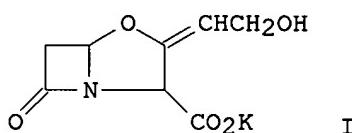
DN 102:225908

TI Degradation of clavulanic acid in aqueous alkaline solution: isolation and structural investigation of degradation products

AU Haginaka, Jun; Yasuda, Hiroyuki; Uno, Toyozo; Nakagawa, Terumichi
 CS Fac. Pharm. Sci., Mukogawa Women's Univ., Nishinomiya, 663, Japan
 SO Chemical & Pharmaceutical Bulletin (1985), 33(1), 218-24
 CODEN: CPBTAL; ISSN: 0009-2363
 DT Journal
 LA English
 IT 96681-85-5
 RL: BIOL (Biological study)
 (clavulanic acid degrdn. product, in aq. alk. soln.)
 RN 96681-85-5 CAPLUS
 CN Pyrazinepropanoic acid, 3,6-bis(2-hydroxyethyl)- (9CI) (CA INDEX NAME)



GI



AB K clavulanate (I) [61177-45-5] was degraded in 0.1M Na2HPO4 soln. at various temps. Four degrdn. products were isolated and their structures were elucidated as 2,5-bis(2-hydroxyethyl)pyrazine [4744-51-8], 3-methyl-2,5-bis(2-hydroxyethyl)pyrazine (II) [96681-84-4], 3-(2-carboxyethyl)-2,5-bis(2-hydroxyethyl)pyrazine (III) [96681-85-5], and 3-ethyl-2,5-bis(2-hydroxyethyl)pyrazine [86917-74-0] by mass spectroscopy and NMR spectroscopy. HPLC anal. of the reaction soln. indicated that the reaction at 60.degree. yielded all 4 pyrazine derivs., whereas II was not formed at 35.degree. and III was not formed at 100.degree.. A reaction mechanism was proposed which involves 4-amino-3-oxobutanol as a key intermediate.

L7 ANSWER 18 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1982:217876 CAPLUS
 DN 96:217876
 TI Di-n-alkyl dicarboxypyrazinedicarboxylates and ferrous complexes
 IN Wiley, Richard H.
 PA USA
 SO U.S., 3 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|-------|----------|-----------------|----------|
| ----- | ----- | ----- | ----- | ----- |
| PI US 4311843 | A | 19820119 | US 1981-236154 | 19810220 |

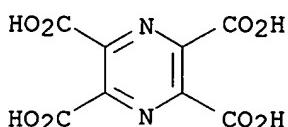
US 1981-236154 19810220

IT 43193-60-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydration of)

RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB The title compds. were obtained as a mixt. of 2,5- and 2,6-diesters by esterifying pyrazinetetracarboxylic anhydride (I). The products have surfactant, liq. crystal, and chelating properties. The Fe chelates have indicator properties. Pyrazinetetracarboxylic acid was treated with Ac₂O to give I which was esterified with decanol in the presence of Ac₂O to give didecyl dicarboxypyrazinedicarboxylate. The diester formed a deep blue-purple Fe(II) chelate.

L7 ANSWER 19 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1981:443167 CAPLUS

DN 95:43167

TI Monoesters of pyrazinetetracarboxylic acid

IN Wiley, Richard H.

PA USA

SO U.S., 2 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

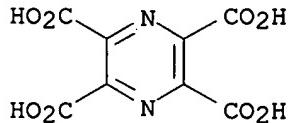
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------|------|----------|-----------------|----------|
| PI | US 4252949 | A | 19810224 | US 1979-71695 | 19790831 |
| | | | | US 1979-71695 | 19790831 |

IT 43193-60-8

RL: PROC (Process)
(conversion of, to monoesters)

RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)

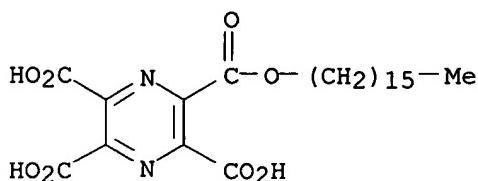


IT 78162-01-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and use of, as sequestering agent)

RN 78162-01-3 CAPLUS

CN Pyrazinetetracarboxylic acid, monohexadecyl ester (9CI) (CA INDEX NAME)



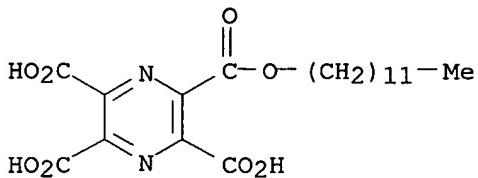
IT 78161-99-6P 78162-00-2DP, copper chelate

78162-00-2P 78162-02-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

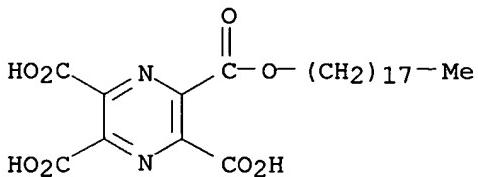
RN 78161-99-6 CAPPLUS

CN Pyrazinetetracarboxylic acid, monododecyl ester (9CI) (CA INDEX NAME)



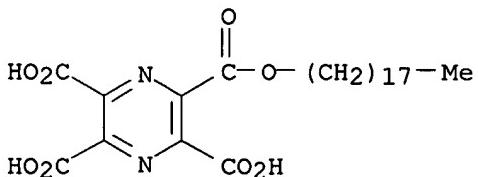
RN 78162-00-2 CAPPLUS

CN Pyrazinetetracarboxylic acid, monoctadecyl ester (9CI) (CA INDEX NAME)



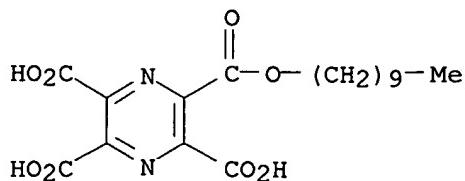
RN 78162-00-2 CAPPLUS

CN Pyrazinetetracarboxylic acid, monooctadecyl ester (9CI) (CA INDEX NAME)



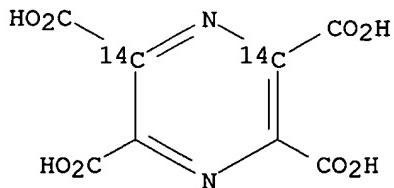
RN 78162-02-4 CAPPLUS

CN Pyrazinetetracarboxylic acid, monodecyl ester (9CI) (CA INDEX NAME)

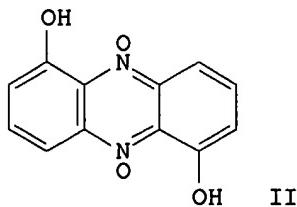


AB Title esters were prepd. from pyrazinetetracarboxylic acid (I) and they are useful as sequestrants in extractive metallurgy. A mixt. of I and 1-dodecanol was refluxed under N to give monoester.

L7 ANSWER 20 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1980:124595 CAPLUS
 DN 92:124595
 TI The biosynthesis of phenazines: incorporation of [14C]shikimic acid
 AU Herbert, Richard B.; Holliman, Frederick G.; Ibberson, P. Nicholas;
 Sheridan, John B.
 CS Dep. Org. Chem., Univ. Leeds, Leeds, LS2 9JT, UK
 SO Journal of the Chemical Society, Perkin Transactions 1: Organic and
 Bio-Organic Chemistry (1972-1999) (1979), (10), 2411-15
 CODEN: JCPRB4; ISSN: 0300-922X
 DT Journal
 LA English
 IT 73030-68-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn and decarboxylation of, label scrambling in)
 RN 73030-68-9 CAPLUS
 CN Pyrazine-2,6-14C2-tetracarboxylic acid (9CI) (CA INDEX NAME)



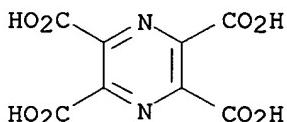
GI



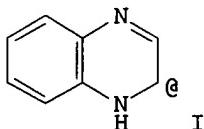
AB Specific and self-consistent incorporations of shikimic-1-14C, -6-14C, and -1,6,7-14C₃ acid (I) into iodinin (II) in *Brevibacterium iodinum* closely defined the orientation of the precursor mol. in the phenazine metabolite.

Triply labeled I gave phenazine-1-carboxylic acid with 1/5 of its activity in the CO₂H group, which requires the involvement of 2 precursor mols. in the biosynthesis or incorporation via a sym. intermediate derived from only 1 precursor mol. Decarboxylation of pyrazinetetracarboxylic acid-ring-14C was examd. under various conditions; with Cu chromite, but not Cu-bipyridyl-quinoline, radioactivity (.1toreq.12%) appeared in the liberated CO₂.

L7 ANSWER 21 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1979:186053 CAPLUS
 DN 90:186053
 TI Electron transfer. 42. Quinoxalinium radicals
 AU Chang, C. R.; Paton, S. J.; Gelerinter, E.; Gould, E. S.
 CS Dep. Chem., Kent State Univ., Kent, OH, USA
 SO Inorganic Chemistry (1979), 18(5), 1294-7
 CODEN: INOCAJ; ISSN: 0020-1669
 DT Journal
 LA English
 IT **43193-60-8**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (redn. of, stability of radical from)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



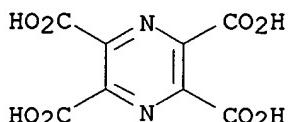
GI



AB Redn. of quinoxaline with V²⁺, Eu²⁺, or Ti³⁺ in 1.2 M HClO₄ yields a strongly absorbing yellow species, which is identified by ESR as the quinoxalinium radical (I). Under favorable conditions, the radical persists for over 1 h in aq. soln. Rates for its formation indicate that it is generated by V²⁺ principally via an outer-sphere path but by Eu²⁺ and Ti³⁺ via inner-sphere redns. Oxidn. of the radical by (NH₃)₅CoBr₂⁺ proceeds by an outer-sphere path at a rate independent of added quinoxaline, Eu³⁺, V³⁺, or Ti(IV), showing that the active species in these reactions is the radical itself, rather than a small quantity of the reducing metal ion in mobile equil. with it. The radical does not conform to the LFER found between the std. potentials of pyridine-related radicals and outer-sphere reactivities.

L7 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

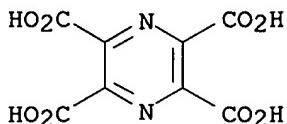
AN 1978:79774 CAPLUS
 DN 88:79774
 TI Electron transfer. 30. Chromium(III)-bound pyrazine radicals
 AU Wu, M. Y.; Paton, S. J.; Fanchiang, Y. T.; Gelerinter, E.; Gould, E. S.
 CS Dep. Chem., Kent State Univ., Kent, OH, USA
 SO Inorganic Chemistry (1978), 17(2), 326-30
 CODEN: INOCAJ; ISSN: 0020-1669
 DT Journal
 LA English
 IT 43193-60-8D, chromium complex
 RL: PRP (Properties)
 (stability of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB The pyrazine greens are strongly absorbing species (.lambda.max 645-650 nm, .epsilon. > 103) formed by the action of Cr²⁺ on substituted pyrazines in aq. acidic soln. The reactions of 1 of the most stable of these derived from pyrazinecarboxamide, with a no. of (NH₃)₅Co^{III} complexes yield Co²⁺, together with the same Cr(^{III}) product as is formed in redn. by Cr²⁺ itself, but rates are several orders of magnitude lower. Such reactions are further inhibited by excess amide. Kinetic data support a sequence in which the green radical cation, formulated as Cr^{III}Ipyr., dissoc. (k₁) to the parent pyrazine and Cr²⁺ which, in turn, may react with Co(^{III}) (k₂) or return to the radical cation (k₋₁). Values of k₁/k₋₁ obtained from measurements on different Co(^{III}) systems are in agreement, and k₂ values for the reactions of fluoroo- and bromopentamminecobalt(^{III}) complexes with Cr²⁺ are consistent with literature rates. The calcd. rate of dissociation of the green ion to Cr²⁺ is 10¹⁰-10¹¹ times lower than the accepted range for substitution reactions at Cr(^{II}) centers but several orders of magnitude above the heterolysis rates of the usual Cr(^{III}) complexes in H₂O, suggesting that the rate of dissociation is detd. by the rate of internal electron transfer within the radical cation. The equil. const. for the conversion of Cr^{III}Ipyr. to Cr²⁺ is 0.1 of that estd. from the redn. potentials of Cr³⁺ and pyrazinecarboxamide, indicating that Cr^{III}Ipyr. is 10 times as stable toward aquation as is the pyrazinecarboxamide complex of Cr(^{II}).

L7 ANSWER 23 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1977:458883 CAPLUS
 DN 87:58883
 TI Electron transfer. 25. Effectiveness of external catalysts for outer-sphere reactions
 AU Fanchiang, Y. T.; Thomas, Jean C.; Neff, V. D.; Heh, Jack C. K.; Gould, Edwin S.
 CS Dep. Chem., Kent State Univ., Kent, OH, USA
 SO Inorganic Chemistry (1977), 16(8), 1942-5
 CODEN: INOCAJ; ISSN: 0020-1669
 DT Journal

LA English
 IT 43193-60-8
 RL: PROC (Process)
 (voltammetry of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB The activities of a variety of pyridine derivs. as catalysts for the Eu²⁺ and V²⁺ redns. of (NH₃)₅pyCo³⁺ are compared. Data are interpreted in terms of a sequence in which the catalyst is reduced (k₁) to a radical intermediate, after which the intermediate may undergo reversal of the initial electron transfer (k₋₁) or may react with Co(III) (k₂) in a rapid outer-sphere process. Several catalysts derived from 2,4-pyridinedicarboxylic acid (I) are more powerful than any reported previously. Although the specific rate k₁ is more sensitive to catalyst structure than is the ratio k₂/k₋₁, variation in the latter in this series is greater than has been obsd. in simple redox series that are unequivocally outer sphere. Moreover, k₁ values for the Eu²⁺ redns. are 102-103 times those for V²⁺, in contrast to simple outer-sphere series in which V²⁺ is the more rapid reductant. The implication is that k₁ and k₋₁ refer to inner-sphere processes for the present group of catalysts. Cyclic voltammograms of all catalysts exhibit quasireversible redn. peaks (1M HClO₄, 25.degree. in the range -0.53 to -0.81 V (vs. SCE). Conjugated species not exhibiting catalytic activity are reduced at potentials outside this range. The catalytic sequence is blocked if the potential barrier to redn. of the catalyst is too high, but may become inoperative also in cases where the radical intermediate, although readily formed, is too sluggish a reductant.

L7 ANSWER 24 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1976:578975 CAPLUS

DN 85:178975

TI Substituted pyrazines

IN Baer, Donald R.; Cairncross, Allan; Smith, Michael

PA du Pont de Nemours, E. I., and Co., USA

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------|------|----------|-----------------|----------|
| PI | US 3963715 | A | 19760615 | US 1973-363804 | 19730525 |
| | | | | US 1972-240296 | 19720331 |

IT 60033-70-7

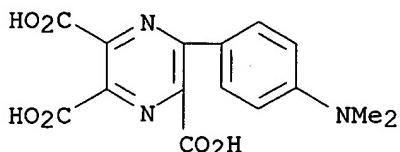
RL: USES (Uses)

(dye, for polyamide fibers, prepn. of)

RN 60033-70-7 CAPLUS

CN Pyrazinetricarboxylic acid, [4-(dimethylamino)phenyl]- (9CI) (CA INDEX

NAME)

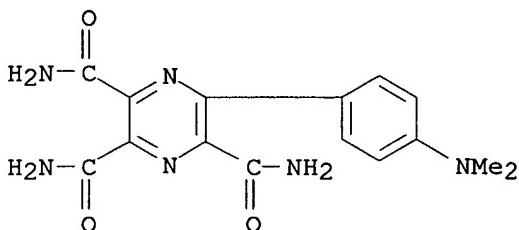


IT 60033-69-4P

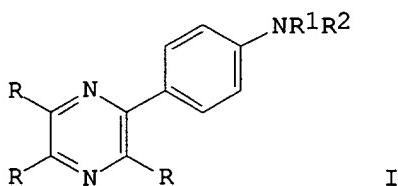
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (prepn. and hydrolysis of)

RN 60033-69-4 CAPLUS

CN Pyrazinetricarboxamide, 6-[4-(dimethylamino)phenyl]- (9CI) (CA INDEX NAME)



GI



I

AB Pyrazine dyes (I, R = CN, CONH₂, CO₂H; R₁ = Me, CH₂CH₂OBz; R₂ = Me, Ph, CH₂CH₂OBz) were prep'd. and used CN, R₁ dye polyester and polyamide fiber fast yellow shades. Thus, a mixt. of tetracyanopyrazine and PhNMe₂ [121-69-7] in Me₂SO was heated at 100.degree. for 8 hr to give I (R = CN, R₁ = R₂ = Me) [60033-71-8]. The other I were similarly prep'd.

L7 ANSWER 25 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1976:560033 CAPLUS

DN 85:160033

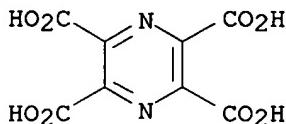
TI Synthesis of heterocyclic analogs of pyromellitic acid and their derivatives

AU Artamonov, A. A.; Nesterchuk, L. A.; Anchugova, L. M.; Matveev, N. G.

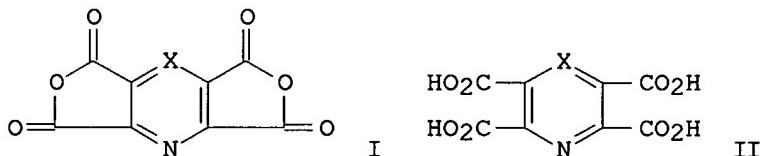
CS USSR

SO Tezisy Dokl. - Simp. Khim. Tekhnol. Geterotsikl. Soedin. Goryuch. Iskop., 2nd (1973), 176 Publisher: Donetsk. Gos. Univ., Donetsk, USSR.

CODEN: 33XLA8
 DT Conference
 LA Russian
 IT **43193-60-8**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (cyclization of, by thionyl chloride)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)

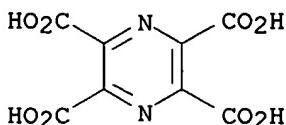


GI

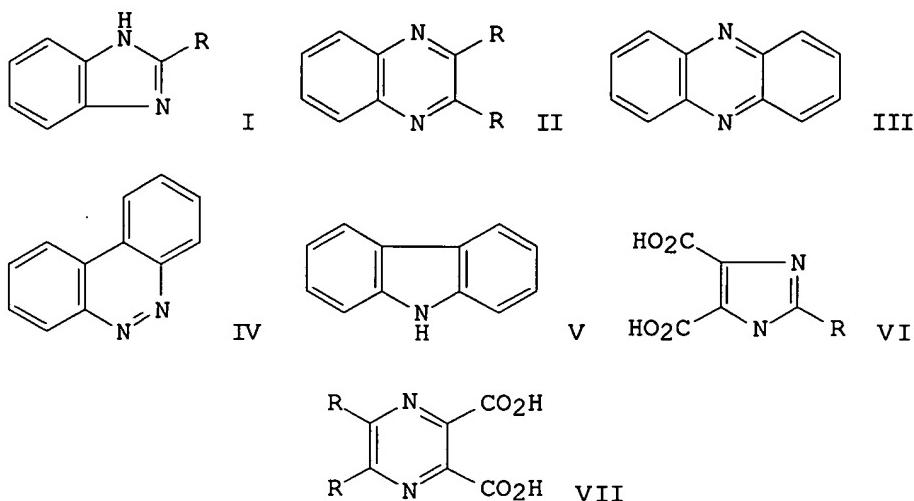


AB The title compds. I (X = CH, N) were obtained in >90% yields by treatment of II with SOC12.

L7 ANSWER 26 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1976:446577 CAPLUS
 DN 85:46577
 TI Oxidation of condensed N-heteroaromatic compounds by ozone in the liquid phase
 AU Tyupalo, N. F.; Yakobi, V. A.; Stepanyan, A. A.; Budennaya, L. F.; Kozorezov, A. Z.
 CS Rubezhn. Filial, Voroshil. Mashinostroit. Inst., Rubezhnoe, USSR
 SO Ukrainskii Khimicheskii Zhurnal (Russian Edition) (1976), 42(4), 394-8
 CODEN: UKZHAU; ISSN: 0041-6045
 DT Journal
 LA Russian
 IT **43193-60-8P**
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in oxidn. of cinnazine by ozone)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



GI



AB Oxidn. of I (R = H, Me) and II (R = H, Cl, OH) by ozone in the liq. phase gave 27.5-96.2% diozonides. Analogous oxidn. of III, IV, and V gave 87.5-100% tetraozonides. Decomprn. of the ozonides with AcOH at 20.degree. gave 4.7 and 12.2% VI (R = Me, H), 8.4-18.3% VII (R = H, Cl, CO₂H) and 5.1% pyridazine-3,4,5,6-tetracarboxylic acid.

L7 ANSWER 27 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1976:61707 CAPLUS

DN 84:61707

TI Pyrazine compounds

IN Cairncross, Allan

PA du Pont de Nemours, E. I., and Co., USA

SO U.S., 15 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

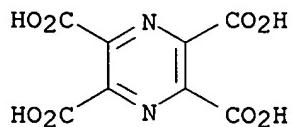
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------|------|----------|-----------------|----------|
| PI | US 3915974 | A | 19751028 | US 1973-375050 | 19730629 |
| | | | | US 1973-375050 | 19730629 |

IT **43193-60-8 58071-12-8**

RL: TEM (Technical or engineered material use); USES (Uses)
(detergent builders)

RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



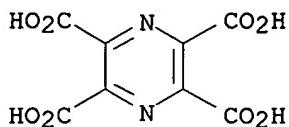
RN 58071-12-8 CAPLUS

CN Pyrazinetetracarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 43193-60-8

CMF C8 H4 N2 O8



CM 2

CRN 67-56-1

CMF C H4 O

H₃C—OH

GI For diagram(s), see printed CA Issue.

AB Pyrazine compds., such as 1,4,5,6-tetrahydro-5,6-dioxo-2,3-pyrazinedicarbonitrile (I) [36023-64-0] and di-Me 1,4,5,6-tetrahydro-5,6-dioxole-2,3-pyrazinedicarboxylate [58084-24-5], were useful as builders in laundry detergents. Thus, a detergent contg. I 35, Na tridecylbenzenesulfonate 14, Na silicate 5, Na₂SO₄ 38, and water 8% had detergency similar to a detergent contg. Na tripolyphosphate instead of I.

L7 ANSWER 28 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1975:4305 CAPLUS

DN 82:4305

TI Thermostable tetraalkyl pyrazinetetracarboxylates

IN Boutte, Daniel; Lecolier, Serge; Brunet, Jean J.

PA Societe National des Poudres et Explosifs

SO Ger. Offen., 25 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

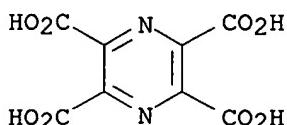
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------|------|----------|-----------------|----------|
| PI | DE 2412110 | A1 | 19741003 | DE 1974-2412110 | 19740313 |
| | | | | FR 1973-9324 | 19730315 |
| | FR 2221452 | A1 | 19741011 | FR 1973-9324 | 19730315 |
| | NL 7402706 | A | 19740917 | NL 1974-2706 | 19740228 |
| | | | | FR 1973-9324 | 19730315 |
| | GB 1420057 | A | 19760107 | GB 1974-11222 | 19740313 |
| | | | | FR 1973-9324 | 19730315 |
| | BE 812396 | A1 | 19740916 | BE 1974-142086 | 19740315 |
| | | | | FR 1973-9324 | 19730315 |

IT 54722-63-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn. and reaction with alcs.)

RN 54722-63-3 CAPLUS

CN Pyrazinetetracarboxylic acid, dipotassium salt (9CI) (CA INDEX NAME)



●2 K

GI For diagram(s), see printed CA Issue.

AB Nine esters I [R = C3-12 alkyl or Et(OCH2CH2)3] with good heat stability, useful as lubricants or plasticizers, were prepd. by esterification of I (R = OH) di-K salt with alcs. in H2SO4.

L7 ANSWER 29 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1974:403884 CAPLUS

DN 81:3884

TI Hydrogen cyanide chemistry. VII. Diiminosuccinonitrile condensation with diaminomaleonitrile

AU Begland, R. W.; Hartter, D. R.; Donald, D. S.; Cairncross, A.; Sheppard, W. A.

CS Cent. Res. Dep., E. I. du Pont de Nemours and Co., Wilmington, DE, USA

SO Journal of Organic Chemistry (1974), 39(9), 1235-9

CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

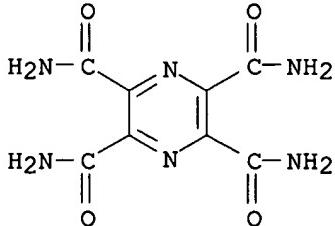
LA English

IT 22051-80-5P 43193-60-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)

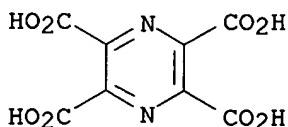
RN 22051-80-5 CAPLUS

CN Pyrazinetetracarboxamide (9CI) (CA INDEX NAME)



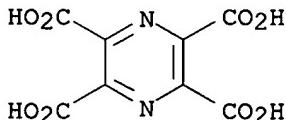
RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB Diiminosuccinonitrile (I) condenses with diaminomaleonitrile (II) to give tetracyanopyrazine, aminotricyanopyrazine, and 2,3-diamino-5,6-dicyanopyrazine. By choice of conditions any one of these tetrafunctional pyrazines can be the major product; linear 1:1 and 2:1 adducts are formed under other conditions and the 1:1 adduct can be cyclized to the pyrazines. I reacts with 1 mol. of water to form an intermediate, probably iminoxalyl cyanide, which condenses with II to give 2-amino-3-hydroxy-5,6-dicyanopyrazine. Two moles of water hydrolyze I to oxalyl cyanide which condenses with II to give tetracyanopyrazine under acidic conditions and 1,4,5,6-tetrahydro-5,6-dioxo-2,3-dicyanopyrazine under neutral conditions.

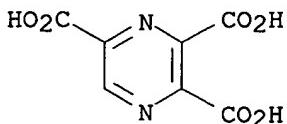
L7 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1973:537087 CAPLUS
 DN 79:137087
 TI Heterocyclic analogs of pyromellitic dianhydride
 AU Artamonov, A. A.; Nesterchuk, L. A.; Anchugova, L. M.; Sheinkman, A. K.
 CS Donetsk. Gos. Univ., Donetsk, USSR
 SO Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya
 Tekhnologiya (1973), 16(8), 1209-11
 CODEN: IVUKAR; ISSN: 0579-2991
 DT Journal
 LA Russian
 IT 43193-60-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



GI For diagram(s), see printed CA Issue.
 AB Pyridinetetracarboxylic dianhydride (I) was prep'd. in 80-92% yield by cyclization of 2,3,5,6-pyridinetetracarboxylic acid with SOC12. Analogously prep'd. was 80% pyrazinetetracarboxylic dianhydride (II).

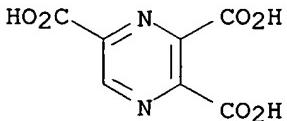
L7 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1972:401215 CAPLUS
 DN 77:1215
 TI Germination of bacterial spores by calcium chelates of dipicolinic acid
 analogs
 AU Lewis, James C.
 CS West. Reg. Res. Lab., Agric. Res. Serv., Berkeley, CA, USA
 SO Journal of Biological Chemistry (1972), 247(6), 1861-8

CODEN: JBCHA3; ISSN: 0021-9258
 DT Journal
 LA English
 IT **37758-36-4**
 RL: PRP (Properties)
 (assocn. const. for)
 RN 37758-36-4 CAPLUS
 CN Pyrazinetricarboxylic acid, calcium salt (2:3) (9CI) (CA INDEX NAME)



● 3/2 Ca

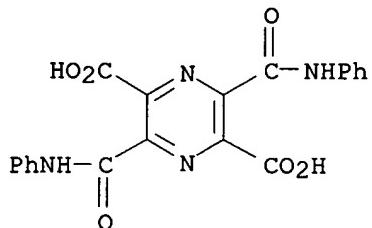
IT **23046-95-9P**
 RL: PREP (Preparation)
 (prepn. of)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



AB Among 8 Ca salts of analogs of dipicolinic acid (I) [499-83-2] tested for induction of *Bacillus megaterium* ATCC 10778 spore germination, only 4H-pyran-2,6-dicarboxylic acid (II) [23047-07-6] was as active as I. Calcium 3-methyldipicolinate [34812-34-5] and calcium 4-methyl-4H-pyran-2,6-dicarboxylate [34812-35-6] were active but the germination proceeded less rapidly. In the presence of a threshold concn. (0.020M) of calcium dipicolinate [6893-30-7], calcium pyrimidine-2,4-dicarboxylate [34812-37-8], calcium pyrazine-2,6-dicarboxylate [34812-38-9], calcium 4-hydroxydipicolinate [34812-39-0], and calcium furan-2,5-dicarboxylate [34812-40-3] also showed activity. A hypothesis is proposed for mobilization of native Ca dipicolinate of dormant spores during germination, by way of a dimerization like that exhibited in crystals of Ca dipicolinate trihydrate and the isostructural Ca pyrandicarboxylate trihydrate.

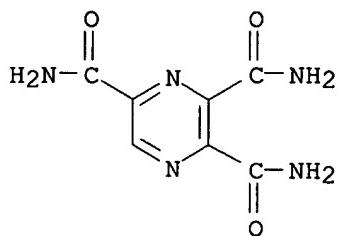
L7 ANSWER 32 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1971:421112 CAPLUS
 DN 75:21112
 TI Polyimides based on pyrazinetetracarboxylic dianhydride and some related model compounds
 AU Vaughan, George B.; Rose, Jerry C.; Brown, Gordon P.
 CS Mellon Inst., Carnegie-Mellon Univ., Pittsburgh, PA, USA

SO Journal of Polymer Science, Polymer Chemistry Edition (1971), 9(4),
 1117-38
 CODEN: JPLCAT; ISSN: 0449-296X
 DT Journal
 LA English
 IT 34067-93-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)
 RN 34067-93-1 CAPLUS
 CN 2,5-Pyrazinedicarboxylic acid, 3,6-bis(phenylcarbamoyl)- (8CI) (CA INDEX NAME)

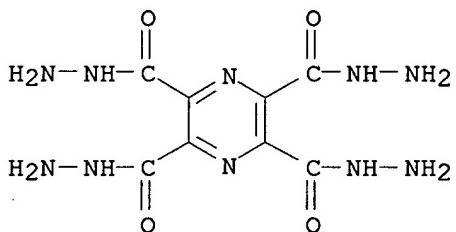


GI For diagram(s), see printed CA Issue.
 AB Pyrazinetetracarboxylic dianhydride (I) condensed with heterocyclic diamines which did not contain an N-N linkage gave polyimides with a lower mol. wt. and thermal stability than the corresponding polypyromelitimides as a result of synthesis problems arising from the low reactivity of the diamines and the ready decarboxylation of pyrazinecarboxylic acids. The ir spectra of model compds. indicated the proposed condensate structure had recurring amideimide units rather than a complete polyimide structure. Unsuccessful polymers were attempted by condensation of I with 3,5-diamino-1,2,4-oxadiazole, 3,4-diamino-1,2,5-oxadiazole, 2,4-diamino-6-methyl-s-triazine, and 2,6-diaminopyridine.

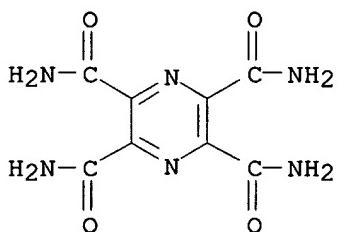
L7 ANSWER 33 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1969:115129 CAPLUS
 DN 70:115129
 TI Synthesis of pyrazines, pyrazine[2,3-d]pyridazines, and a dipyridazino[4,5-b:4',5'-e]pyrazine
 AU Rao, R. Bhima; Castle, Raymond N.
 CS Univ. New Mexico, Albuquerque, NM, USA
 SO Journal of Heterocyclic Chemistry (1969), 6(2), 255-8
 CODEN: JHTCAD; ISSN: 0022-152X
 DT Journal
 LA English
 IT 22051-71-4P 22051-75-8P 22051-80-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)
 RN 22051-71-4 CAPLUS
 CN 2,3,5-Pyrazinetricarboxamide (8CI) (CA INDEX NAME)



RN 22051-75-8 CAPLUS
 CN 2,3,5,6-Pyrazinetetracarboxylic acid, tetrahydrazide (8CI) (CA INDEX NAME)

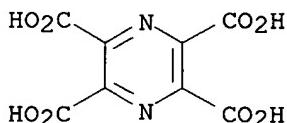


RN 22051-80-5 CAPLUS
 CN Pyrazinetetracarboxamide (9CI) (CA INDEX NAME)



GI For diagram(s), see printed CA Issue.
 AB 2-(D-arabino)-Tetrahydroxybutylquinoxaline was subjected to oxidn. with KMnO4 to give pyrazine-2,3,5-tricarboxylic acid, which was esterified to the tri-Et ester, and treated with N2H4-MeOH to give pyrazino[2,3-d]pyridazine-5,8-dione-2-carbohydrazide. Treatment of the ester with NH3-MeOH gave pyrazine-2,3,5-tricarboxamide. Pyrimido[4,5-b]quinoxaline-2,4-dione was hydrolytically decarboxylated to 2-aminoquinoxaline, which was acetylated and oxidized with KMnO4 to give 2-aminopyrazine-5,6-dicarboxylic acid, whose di-Et ester formed 2-aminopyrazino[2,3-d]pyridazine-5,8-dione on treatment with N2H4-MeOH. 5,8-Diaminopyrazino[2,3-d]pyridazine was treated with picryl fluoride in Me2SO to give 5,8-bis(picrylamino)pyrazino[2,3-d]-pyridazine. o-(H2N)2C6H4 was oxidized with FeCl3, and the 2,3-diaminophenazine produced was treated with KMnO4 to give pyrazine-2,3,5,6-tetracarboxylic acid, whose tetra-Et ester (I) was converted into pyrazine-2,3,5,6-tetracarbohydrazide on treatment with N2H4-MeOH. This was refluxed with 10% HCl to give dipyradizino[4,5-b:4',5'-e]pyrazine-1,4,6,9-tetrone (II). Treatment of I with NH3-MeOH gave pyrazine-2,3,5,6-tetracarboxamide.

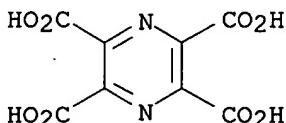
L7 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1961:112181 CAPLUS
 DN 55:112181
 OREF 55:21140e-h
 TI Cyclization of 1,5-diphenyl-1,3,5-pantanetrione with ethyl oxalate
 3,5-Dibenzoyl-1,2,4-cyclopentanetrione and its quinoxaline
 AU Light, Robley J.; Hauser, Charles R.
 CS Duke Univ., Durham, NC
 SO Journal of Organic Chemistry (1961), 26, 1296-9
 CODEN: JOCEAH; ISSN: 0022-3263
 DT Journal
 LA Unavailable
 IT 43193-60-8, 2,3,5,6-Pyrazinetetracarboxylic acid
 (prepn. of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB NaOEt (from 3.5 g. Na in 250 ml. alc.) refluxed 5 hrs. with 10 g. 1,5-diphenyl-1,3,5-pantanetrione (I) and 5.5 g. Et oxalate, the mixt. evapd., the residue poured into 500 ml. ice H₂O, extd. with Et₂O, the solid collected, shaken with aq. NaHCO₃, sep'd., and the solvent removed gave 2.8 g. I. Acidification of the bicarbonate soln. gave 4.1 g. 3,5-dibenzoyl-1,2,4-cyclopentanetrione (II), m. 154-6.degree. (Me₂CO). Approx. the same yield of II was obtained when the reaction was repeated with 0.113 mole NaOEt. The yield was not improved by removing the alc. as an azeotrope with C₆H₆ before acidification. II (1.5 g.) in 45 ml. 95% alc. treated several min. on the steam bath with 0.6 g. o-phenylenediamine gave 0.6 g. 1,3-dibenzoyl-2-oxocyclopenteno[4,5-b]-quinoxaline (III), m. 271-4.degree. (C₆H₆). KMnO₄ (5.2 g.) in 25 ml. H₂O added dropwise to 1.2 g. III in 20 ml. 5% KOH, the mixt. heated 2 hrs., filtered, the filtrate concd., and acidified gave BzOH and the di-K salt of the product. The BzOH removed by suspending the solid in hot alc. and filtering left 0.65 g. BzOH. The solid was recrystd. from 10 ml. 20% HCl to give 0.15 g. pyrazinetetracarboxylic acid (IV), m. 195-9.degree. (decompn.). KMnO₄ (20.6 g.) in 100 ml. H₂O added to 1.8 g. phenazine in 20 ml. hot H₂O contg. one pellet KOH and the product isolated as above gave 0.7 g. IV. The infrared spectra were given for the above compds.

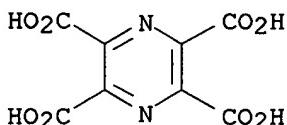
L7 ANSWER 35 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1961:93514 CAPLUS
 DN 55:93514
 OREF 55:17643e-h
 TI On pyrazino[d,d']ditropone and its derivatives
 AU Asao, Toyonobu
 CS Tohoku Univ., Sendai
 SO Bulletin of the Chemical Society of Japan (1961), 34, 151-3
 CODEN: BCSJA8; ISSN: 0009-2673
 DT Journal

LA Unavailable
 IT **43193-60-8**, 2,3,5,6-Pyrazinetetracarboxylic acid
 (prepn. of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB 5-Nitrosotropolone (I) (0.9 g.) and 2,5-diaminotroponeimine (II).2HCl (1.1 g.) refluxed 20 min. in 40 ml. MeOH and cooled produced 1.3 g. pyrazino[d,d']ditroponemonoimine monoxime (III).HCl, brownish orange crystals, m. above 300.degree.. Neutralization of aq. III.HCl with NaHCO3 gave III, brown powder, m. above 300.degree.; picrate, red needles, darkened about 225.degree., m. above 300.degree.. III with alk. KMnO4 gave pyrazinetetracarboxylic acid, plates, m. 205.degree. (decompn.); tetra-Me ester, needles, m. 181-2.degree. (MeOH-C6H6). I acetate (0.2 g.) and 0.2 g. II.2HCl refluxed 10 min. in 10 ml. MeOH gave 0.3 g. red needles, darkened about 250.degree., which on neutralization gave III acetate, brown powder, m. above 300.degree.. Attempted acetylation of III gave a black powder. Gentle heating of 0.1 g. III.HCl in 1.5 ml. 3N NaOH (NH3 evolved), keeping 30 min. at room temp., and acidifying with HOAc produced 70 mg. pyrazino[d,d']ditropone monoxime (IV), orange needles, m. 266.degree. (decompn.) (C5H5N); dioxime, fine red crystals, m. above 300.degree.; 2,4-dinitrophenylhydrazone, violet crystals, decompd. at 265.degree.. IV (0.3 g.), 0.3 g. CuCO3, and 10 ml. 80% HCO2H heated 120 hrs. at 70.degree., cooled, filtered, and neutralized with NaHCO3 gave 70 mg. pyrazino[d,d']ditropone (V), golden needles, m. 244-5.degree. (decompn.) (C5H5N). V was also prep'd. by heating 0.15 g. III.HCl, 0.15 g. CuCO3, and 4.5 ml. 80% HCO2H 70 hrs. at 80.degree..

L7 ANSWER 36 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1961:8134 CAPLUS
 DN 55:8134
 OREF 55:1627e-i,1628a-d
 TI Quinoxalotropone derivatives. II. Condensation products of 5-nitro- and 5-nitrosotropolones with o-phenylenediamine
 AU Ito, Sho
 CS Tohoku Univ., Sendai
 SO Sci. Repts. Tohoku Univ., First Ser. (1959), 43, 216-22
 DT Journal
 LA English
 IT **43193-60-8**, 2,3,5,6-Pyrazinetetracarboxylic acid
 (prepn. of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)

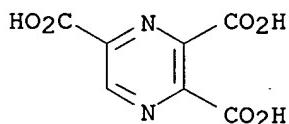


GI For diagram(s), see printed CA Issue.

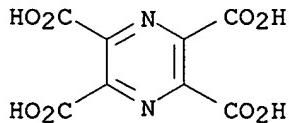
AB cf. CA 54, 5673c. Refluxing substituted 5-nitrosotropolones (I) (substituents other than H given in parentheses) with 1.1 equivalents o-phenylenediamine (II) in 7 vols. EtOH 20 min. gave yellow cryst. substituted quinoxalotropone oximes (III). Thus, I (X = Br) gave 76% III (X = Br), m. 206.degree. (decompn.); I (X = Y = Br) gave 26% III (X = Y = Br), m. 190.5.degree. (decompn.); I (Z = Me) gave 56% III (Z = Me), m. 246.degree. (decompn.); I (X = iso-Pr) gave 26% III (X = iso-Pr), 199.5-200.5.degree. (decompn.); I (X = PhO) gave 49% III (X = PhO), m. 205.degree. (decompn.); I (X = Ph) gave 10% III (X = Ph), m. 235-6.degree. (decompn.). Refluxing 0.11 g. I (X = Ph) with 0.07 g. II in 1.5 ml. HOAc gave a product, which eluted from alumina with C₆H₆ gave 0.04 g. 2-methyl-benzimidazole, m. 174.degree.; elution with EtOAc gave 0.015 g. III (X = Ph). Tropoquinone dioxime (0.2 g.) and 0.16 g. II refluxed in 10 ml. MeOH gave 0.03 g. quinoxalotropone oxime (IV). Similarly, 0.2 g. tropoquinone trioxime, 0.16 g. II, and 10 ml. MeOH gave 0.03 g. IV. 5-Nitrotropolone (V) (0.2 g.) and 0.15 g. II in 30 ml. C₆H₆ was refluxed 2 hrs. to give 0.1 g. quinoxalotropone oxime (VI), m. 249.degree. (decompn.), .lambda. (MeOH) 238, 279, 400 m.mu. (log .epsilon. 4.40, 4.54, 4.16). The mother liquors from VI yielded orange-red scales (VII), m. 119.degree. (decompn.), which analyzed correctly for a 1:1 mol. compd. of V and II, whose ultraviolet spectrum was similar to that of an alk. soln. of V. Shaking a C₆H₆ solution of VII with 2N HCl gave V. Refluxing 0.2 g. V, 0.15 g. II, and 30 ml. EtOH 40 min. gave 0.06 g. VI and evapn. of the filtrate gave 0.09 g. yellow needles (VIII), m. 156-8.degree. (decompn.), whose ultraviolet spectrum was identical to that of VII. VIII showed no m.p. depression when mixed with the compd., m. 156-8.degree., obtained previously by Nozoe, et al. (CA 53, 18885c). V (0.2 g.), 0.15 g. II, and 5 ml. HOAc heated on a water bath 15 min. gave 0.28 g. VII. VII was obtained by refluxing 0.1 g. V, 0.07 g. II, and 20 ml. MeOH 15 min. Refluxing 0.2 g. VII in 1 ml. MeOH 30 min. gave 0.03 g. VI. V (0.1 g.), 0.15 g. II, and 20 ml. EtOH treated as above gave 0.09 g. VI and 0.03 g. VII. Acetylation of VI gave quinoxalotropone oxime acetate, m. 207-8.degree. (decompn.). Hydrolysis of 0.05 g. VI with 0.1 g. CuCO₃ and 3 ml. HCO₂H gave quinoxalotropone, m. 192.degree.. Hydrogenation of 0.05 g. VI and 0.01 g. Pt in 60 ml. MeOH yielded a product, which acetylated gave .gamma.-hydroxy-2,3-pentamethylenequinoxaline acetate, m. 282.degree. (decompn.). Oxidn. of 0.3 g. VI gave quinoxaline-2,3-dicarboxylic acid, m. 190.degree. (decompn.). 5,7-Dinitrohinokitiol (0.2 g.), 0.1 g. II, and 10 ml. MeOH heated on a water bath 5 min. gave 0.12 g. violet crystals (IX), C₁₆H₁₄O₄N₄, m. 156.degree. (decompn.), .lambda. 252, 333, 494 m.mu. (log .epsilon. 4.38, 3.76, 3.82); Me ether m. 208.degree.. Similarly, 3,5-dinitrotropolone gave violet crystals (X), m. above 300.degree., ultraviolet spectrum similar to that of IX. The product of oxidn. of 0.8 g. X with 7.8 g. KMnO₄ in dil. alk. soln. at 80.degree. was collected as the Ag salt and decompd. in acetone to give pyrazinetetracarboxylic acid, m. 205.degree. (decompn.) (EtOAc). Refluxing 0.1 g. 3,7-di-bromo-5-nitrotropolone and 0.04 g. II in HOAc 5 min. gave yellow needles, C₁₃H₁₁N₃O₄Br₂, m. 171-2.degree. (MeOH), whose analyses and ultraviolet spectrum suggested it to be a 1:1 mol. compd. The formation of VI from V

was explained as a consequence of the prior redn. of V by II to give 5-nitrosotropolone.

L7 ANSWER 37 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1959:89456 CAPLUS
 DN 53:89456
 OREF 53:16141g-i,16142a-i,16143a-c
 TI Pyrazine derivatives. IV. Preparation and specific oxidation of 2,3-dialkoxy- and 2,3-diaryloxyquinoxalines
 AU Mager, H. I. X.; Berends, W.
 CS Technol. Univ. Delft, Neth.
 SO Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1959), 78, 5-21
 CODEN: RTCPB4; ISSN: 0370-7539
 DT Journal
 LA English
 IT 23046-95-9, 2,3,5-Pyrazinetetricarboxylic acid 43193-60-8,
 2,3,5,6-Pyrazinetetracarboxylic acid
 (prepn. of)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)

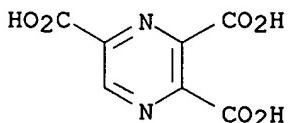


GI For diagram(s), see printed CA Issue.
 AB cf. C.A. 53, 10240i. Unlike many other substituted quinoxaline derivs., 2,3-dialkoxy- and 2,3-diaryloxyquinoxalines, C₆H₄.N:CR.CR₁:N (I) were known to be relatively stable to KMnO₄. The homocyclic substituted quinoxalines, R₂C₆H₃.N:CR.1:N (II), were intermediates for the prepn. of pyrazinecarboxylic acids (III). The quinoxalines I (R = H, CO₂H, (CHOH)₃CH₂OH, Me, Me, Cl; R₁ = H, CO₂H, H, H, Me, Cl) were oxidized to III on a preparative scale by alk. KMnO₄ but introduction of the 2,3-dialkoxy and 2,3-diaryloxy groups gave the quinoxaline ring unexpected and outstanding stability. I (R = R₁ = MeO) (IV) was oxidized above 100.degree. to yield a small amt. of III but the stability increased through I (R = R₁ = EtO) (V) to I (R = R₁ = PrO) (VI) to such an extent that VI heated 2.5 hrs. at 150.degree. with alk. KMnO₄ gave a scarcely visible amt. of MnO₂. II (R = R₁ = Me, R₂ = 5 (or 6)-NO₂) (VII, VIII) was less stable to KMnO₄ but without production of III, indicating that degradation had taken place in the heterocyclic ring. Na (4.6 g.) in 100

ml. abs. MeOH stirred (ice bath) at 0.degree. with portionwise addn. of 19.9 g. I ($R = R' = Cl$) (IX) [prep'd. by the action of PC15 on I ($R = R_1 = OH$) (X)], the stirred mixt. refluxed 1 hr., the neutral soln. poured into 300 ml. water, and the filtered product washed with water gave 17 g. IV, m. 92-3.degree. (dil. alc.). V, m. 78.degree., and VI, m. 48.degree. (dil. alc.), were similarly prep'd. PhOH (28 g.) and 10 g. KOH at 120.degree. (oil bath) treated gradually with 10 g. IX and the mixt. kept 20-30 min. at 120.degree., the cooled residue taken up in warm N KOH, and the filtered product washed with hot water gave 14 g. I ($R = R_1 = PhO$), m. 166.degree. (Lockhart and Turner, C.A. 31, 39263). Similarly was prep'd. I ($R = R_1 = p-O_2NC_6H_4O$), m. 210-16.degree. (dil. Me₂CO). No corresponding \cdot omicron.-NO₂ or 2,4-(O₂N)₂ compds. were obtained on account of violent reactions with pyrotechnic phenomena. Concd. H₂SO₄ (165 ml.) heated 5 min. at 110.degree. with 74 g. 2,3-(O₂N)C₆H₃NHAc (from nitration of m-O₂NC₆H₄NHAc and recrystn. from 2:1 C₆H₆-Me₂CO), the mixt. poured into 1 kg. ice and 500 ml. water, and the water-washed and dried product (49 g.) recrystd. repeatedly gave only 60% 2,3-(O₂N)C₆H₃NH₂ (XI), m. 126.degree. (Pausacker and Scroggie, C.A. 49, 13924g). Deacetylation with concd. HCl in alc. gave a practically quant. conversion to XI. PhCl sulfonated and nitrated, the 4,3,5-Cl(O₂N)C₆H₂SO₃H isolated as the K salt, boiled with concd. NH₄OH, and the salt desulfonated according to Schultz [Org. Syntheses, 31, 45 (1951)] gave 2,6-(O₂N)C₆H₃NH₂, partially reduced by refluxing in alc. with warm aq. Na₂S.9H₂O and NaHCO₃ to give 1,2,3-(H₂N)C₆H₃NO₂ (XII). Reduction of 95 g. 2,4-(O₂N)C₆H₃NH₂ according to Griffin and Peterson [Org. Syntheses, Collective Vol. III, 242(1955)] gave 45 g. 1,2,4-(H₂N)C₆H₃NO₂ (XIII), m. 197-8.degree.. Acetylation of 61.5 g. 4-MeOC₆H₄NH₂, nitration of the product, and deacetylation with KOH in MeOH yielded 63.5 g. 2,4-O₂N(MeO)C₆H₃NH₂ (XIV). XII (10 g.) and 16 g. (CO₂H)C₂H₂O in 200 ml. 50% AcOH refluxed 3 hrs., the cooled mixt. filtered from 6 g. product, the filtrate evapd. in vacuo, the residue crystd. (min. of 50% AcOH), the crops combined, and recrystd. (50% AcOH and Norit) gave 8 g. II ($R = R_1 = OH$, $R_2 = 5-NO_2$) (XV), m. 296.degree. (decompn.), also obtained by refluxing 10 g. XII 2.0 to 2.5 hrs. in 125 ml. (CO₂Et)₂, and converted in a high over-all yield to VII and its derivs. XV (6.5 g.) and 15 g. PC15 distd. at 160-70.degree. to cessation of distn. of POC13, the product crystd. (dil. Me₂CO), and dried over P206 in vacuo gave 7 g. II ($R = R_1 = Cl$, $R_2 = 5-NO_2$) (XVI). XVI (7 g.) in 300 ml. MeOH refluxed 20 min. with dropwise addn. of 1.32 g. Na in 50 ml. MeOH with stirring, the mixt. refluxed 20-25 min., and evapd. in vacuo yielded 81-8% VII, m. 156.degree. (dil. Me₂CO). XIII (7.5 g.) and 12.5 g. (CO₂H)C₂H₂O refluxed 30 min. with stirring with 75 ml. 6N HCl, the mixt. kept overnight at room temp., filtered, the ppt. washed with 50 ml. hot water, taken up in 200 ml. boiling 2N NaOH, the hot red soln. neutralized with 4N HCl, the yellow mixt. filtered, and the ppt. washed (100 ml. distd. water) and dried (P205 in vacuo) yielded 10 g. material, recrystd. (40 parts 50% AcOH and Norit) to give pure II ($R = R_1 = HO$, $R_2 = 6-NO_2$) (XVII), m. 345-6.degree. (decompn.). Finely powd. XVI (18 g.) distd. at 160-70.degree. over 42 g. PC15, the cooled mixt. taken up in ice water, the dried product extd. with C₆H₆, the ext. boiled with Norit, the filtered soln. evapd. in vacuo, and the product crystd. (ligroine) gave 17 g. II ($R = R_1 = Cl$, $R_2 = 6-NO_2$), m. 153.degree., refluxed with NaOMe in MeOH to give 16 g. VIII, m. 175-5.5.degree. (MeOH). VII (500 mg.) in 50 ml. 96% alc. refluxed 30 min. with 2 ml. N₂H₄.H₂O and 50 mg. 5% Pd-C and the filtered soln. evapd. in vacuo yielded 70-80% II ($R = R_1 = MeO$, $R_2 = 5-NH_2$) (XVIII), m. 96-7.degree. (ligroine, b. 60-80.degree.). Similar reduction of VIII yielded 75-80% II ($R = R_1 = MeO$, $R_2 = 6-NH_2$) (XIX), m. 130-30.5.degree. (ligroine). VII and VIII refluxed 2 hrs. with Na₂S.9H₂O

in 80% alc. did not reduce, but did with Fe(OH)2. XVIII (150 mg.) refluxed 2 hrs. in 6 ml. 6N HCl, filtered, the ppt. washed with alc., the HCl salt (155 mg.) dried, and recrystd. (50 ml. boiling water) gave the free II (R = R1 = HO, R2 = 5-NH2), m. 339-4.degree. (decompn.). The colorless dealkylation product from XIX taken up in 1:20 H2O-alc. gave II (R = R1 = HO, R2 = 6NH2) HCl salt, m. above 365.degree., giving an intense blue-violet color with FeCl3. The compds. were also prep'd. by reductions of XV and XVII with Na2S. XIV (42 g.) reduced with SnCl2 in concd. HCl, the mixt. poured into 30% NaOH, extd. with C6H6, the ext. evapd., the residue refluxed 3.5 hrs. with 250 ml.(CO2Et)2, the mixt. filtered, the ppt. washed with ligroine, and dried gave 35 g. II (R = R1 = OH, R2 = 6-MeO), converted by refluxing 1 hr. (oil bath) at 125.degree. with 75 ml. POCl3 and distg. the excess POCl3, taking up the residue in ice water, filtering, extg. the residue with C6H6, and evapg. the decolorized (Norit) ext. to 32-3 g.II (R = R1 = Cl, R2 = 6-MeO) (XX), m. 159-60.degree. (Me2CO). XX (5 g.) refluxed with 1 g. Na in 150 ml. MeOH, the neutral soln. concd., kept at 0.degree., filtered, the ppt. washed with cold MeOH, and recrystd. yielded 83-9% 2,3,6-trimethoxy-quinoxaline, m. 127.degree.. XX cannot be dealkylated with HI or HBr since the Cl groups are rapidly replaced with HO groups (Lane and Williams, C.A. 51, 2808g). The oxidations of I with KMnO4 were carried out according to previous communications (C.A. 53, 10241i).

L7 ANSWER 38 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1959:56476 CAPLUS
 DN 53:56476
 OREF 53:10240i,10241a-i
 TI Pyrazine derivatives. II. Preparation of pyrazine-2,3,5-tricarboxylic acid and of pyrazine-2,5- and -2,6-dicarboxylic acids
 AU Mager, H. I. X.; Berends, W.
 CS Technol. Univ., Delft, Neth.
 SO Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1958), 77, 827-41
 CODEN: RTCPB4; ISSN: 0370-7539
 DT Journal
 LA Unavailable
 IT 23046-95-9, 2,3,5-Pyrazinetetricarboxylic acid
 (and derivs.)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)

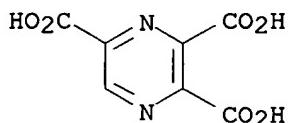


AB cf. C.A. 51, 12104e. Pyrazine-2,3,5-tricarboxylic acid (I) was prep'd. by oxidation of the readily available 2-(D-arabotetrahydroxybutyl)quinoxaline (II) and was easily decarboxylated to the 2,5- (III) and 2,6-pyrazinedicarboxylic acids (IV). N2H4.H2O, ogr:-(H2N)2C6H4, and p-toluyl-d-isoglucomamine heated 30 min. in dil. AcOH on a steam bath according to the procedure of Weygand and Bergmann. (C.A. 42, 4947i) yielded 90% II, m. 190.degree.. II (15 g.) in 1.5 l. H2O heated on a steam bath, the yellow soln. stirred vigorously with the addn.

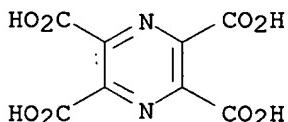
of 7.5 g. KOH, the red liquid treated portionwise in 60-90 min. with 110 g. KMnO₄, and the last traces of color removed with MeOH, the mixt. filtered and the MnO₂ washed 5 times with hot H₂O, the combined filtrates concd. in vacuo to 200 ml., the concentrate adjusted to pH 6 with 65 ml. HNO₃ (d. 1.35), the soln. boiled and the CO₂-free liquid treated with 35 g. AgNO₃ in 50 ml. H₂O, the mixt. filtered and the solid washed with warm water, suspended in 100 ml. boiling 2N HCl and filtered immediately, the pptd. AgCl retreated twice with 50 ml. 2N HCl and washed 5 times by suspension in hot water and filtered, the cooled filtrates filtered, and the products dried in vacuo over P₂O₅ gave 13 g. I dihydrate, m. 190.degree., dehydrated over P₂O₅ at 100.degree., and unstable to light. I (4 g.) in 40 ml. abs. MeOH contg. 3.4% dry HCl refluxed 15 hrs., the mixt. evapd. in vacuo and the residue dild. with 40 ml. H₂O, the soln. neutralized with solid Na₂CO₃, satd. with NaCl and extd. 10 times with 20 ml. EtOAc, the dried (MgSO₄) ext. evapd. in vacuo, and the residue recrystd. (alc.) gave 2 g. tri-Me ester, m. 80.5.degree., also prep'd. by refluxing 7.5 g. Ag salt of I and 15 ml. MeI in 35 ml. abs. MeOH and by esterifying I with CH₂N₂ in Et₂O. Following preliminary expts., 5.0 g. I dihydrate refluxed 72 hrs. in 250 ml. H₂O, the soln. kept overnight at room temp., the mixt. slowly warmed to 70-5.degree. on a steam bath and cooled to 35.degree., the coarse ppt. filtered off and washed with water, the ppt. suspended in 5-7 ml. hot H₂O, the cooled suspension filtered and the residue washed with 10 ml. cold H₂O, the product taken up in 10 ml. warm 0.5N NH₄OH and the decolorized soln. (Norite) filtered, the residue washed with 5 ml. H₂O and the filtrate and washings acidified to pH 1.0 with 0.5N HCl, filtered, and the water-washed ppt. dried over P₂O₅ in vacuo gave 0.4 g. III, m. 253.degree. (sealed capillary), subliming at 270.degree.. The filtrate evapd. in vacuo to 20-30 ml. and the warm concd. soln. refrigerated, filtered, and the product washed with ice-cold water gave 3.0 g. IV dihydrate, m. 224-5.degree.. The dihydrate (2 g.) in 50 ml. warm H₂O neutralized and treated with aq. AgNO₃, filtered and the residue washed with hot water and a small amt. of alc., the product dried to constant wt. in vacuo over P₂O₅, refluxed 30 hrs. with 10 mole MeI and 20 ml. MeOH, filtered and the red residue washed with EtOAc, the filtrates evapd. in vacuo, and the black residue (1 g.) distd. at 160-80.degree./3-4 mm. gave 0.8 g. 2,6-dicarbomethoxypyrazine, m. 119-20.degree., also produced by esterification of IV with CH₂N₂ in Et₂O. Me₂CO (4 moles) and concd. HCl stirred at 0.degree. (ice-NaCl) treated dropwise with 1 mole iso-PrONO, the mixt. distd. in vacuo, and the residue recrystd. (Et₂O-petr. ether) yielded 70% oximinoacetone (V), m. 64.5-65.degree.. V (17.4 g.) added portionwise to 90 g. SnCl₂H₂O and 130 ml. concd. HCl at 0.degree. (ice H₂O), the mixt. treated in succession with 200 ml. distd. H₂O, 115 g. NaOH in 350 ml. H₂O added very slowly, and 60 g. HgCl₂ in 450 ml. H₂O, the mixt. steam distd. and distillate (500-600 ml.) treated with concd. NaOH to give a final concn. of 5% NaOH, extd. 3 times with 125 ml. Et₂O, the ext. washed with 50% KOH, dried over solid KOH, evapd., and the residue distd. yielded 40-42.5% 2,5-dimethylpyrazine (VI), b. 153.5-55.degree.. VI (4 g.), 11 g. p-MeOC₆H₄CHO, and 1 g. ZnCl₂ heated 8 hrs. at 185.degree. in a sealed tube (encased in a steel cover), the cooled product extd. with 200 ml. alc., and the insol. residue (6 g.) recrystd. (HCONMe₂) yielded 40% 2,5-bis(p-methoxystyryl)pyrazine (VII), m. 233-4.degree.. VII (4.63 g.) suspended in 500 ml. H₂O contg. 2 g. KOH, the mixt. stirred vigorously, heated on a steam bath with portionwise addn. of 15.9 g. KMnO₄ in 8.5 hrs., filtered and the MnO₂ washed with 50 ml. N NaOH, the filtrate acidified with 120 ml. 2N HNO₃ to pH 2, the ppt. refluxed 2 hrs. with 100 ml. abs. MeOH satd. with dry HCl, the cooled soln. filtered, and the cryst. product (1.61 g.) recrystd. (80 ml. MeOH)

gave 1.42 g. 2,5-dicarbomethoxypyrazine, m. 169-70.degree..

L7 ANSWER 39 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1958:55087 CAPLUS
 DN 52:55087
 OREF 52:9869a-b
 TI Chromatographic identification of pyrazine bases
 AU Dietrich, P.; Mercier, D.
 CS Inst. biol. phys.-chim., Paris
 SO Journal of Chromatography (1958), 1, 67-9
 CODEN: JOCRAM; ISSN: 0021-9673
 DT Journal
 LA French/English
 IT 23046-95-9, 2,3,5-Pyrazinetetricarboxylic acid 43193-60-8,
 2,3,5,6-Pyrazinetetracarboxylic acid
 (identification of)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



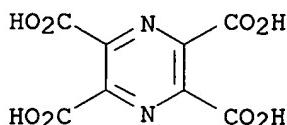
RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB Mono-, di-, tri-, and tetramethylpyrazines were sepd. from each other by gas-liquid chromatography on a dinonyl phthalate column at 120.degree. with N as the mobile phase. Sepn. of 2,3-, 2,5-, and 2,6-dimethylpyrazines by this procedure was unsatisfactory, but these compds. can be sepd. by oxidation with 4% KMnO4 for 5-6 hrs. at 80-100.degree. and chromatography of the resulting crude acids on Whatman No. 1 paper for 15 hrs., by the ascending method, with BuOH-HCO2H-H2O (4:1:1) as solvent and 0.5% FeSO4 spray to view the spots. The pyrazinecarboxylic acids showed the following Rf values and coloration with FeSO4, resp.: mono, 0.64, red-yellow; 2,3-di, 0.49, red-Bordeaux; 2,5-di, 0.42, violet; 2,6-di, 0.71, red-violet; tri, 0.57, red-violet; tetra, 0.31, violet.

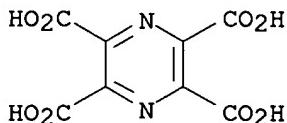
L7 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1957:66643 CAPLUS
 DN 51:66643
 OREF 51:12104e-i,12105a-b
 TI Pyrazine derivatives
 AU Mager, H. I. X.; Berends, W.
 CS Technol. Univ., Delft, Neth.

SO Rec. trav. chim. (1957), 76, 28-34
 DT Journal
 LA Unavailable
 IT 43193-60-8, 2,3,5,6-Pyrazinetetracarboxylic acid
 (prepn. of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB Interest in the physiol. effects of pyrazinecarboxylic acids aroused by the isolation of dipicolinic acid from *Bacillus subtilis* and *B. megatherium* (cf. Powell and Strange, C.A. 47, 7592b) led to studies of the prepn. and reduction of pyrazinetetracarboxylic acid (I). Finely powd. $\text{o-C}_6\text{H}_4(\text{NH}_2)_2$ (54 g.) in 83.3 ml. concd. HCl and 2.5 l. distd. H₂O stirred with 400 g. FeCl₃ in 750 ml. H₂O, the mixt. kept overnight at room temp., filtered, the residue washed with cold. dil. 0.3N HCl taken up in 2.5 l. hot H₂O, the soln. treated with concd. KOH, and the product filtered off, washed with H₂O, and dried at 100-10.degree. gave 26.5 g. 2,3-diaminophenazine (II). The alk. filtrate heated, acidified to pH 4.5 with glacial AcOH, the cooled soln. filtered, and the residue washed with H₂O and dried at 100-10.degree. yielded 26 g. 2-amino-3-hydroxyphenazine (III). KOH (5 g.), 7.5 g. II or III, and 1.5 l. H₂O refluxed 4 hrs. with stirring and portionwise (2-5 g.) addn. of 70 g. KMnO₄, filtered, the residue extd. repeatedly with boiling H₂O, the combined filtrate and extns. concd. in vacuo to 200-50 ml., the concentrate acidified to pH 4-5 with 20 ml. HNO₃, boiled to expel the CO₂, the soln. treated with 125 ml. 10% AgNO₃, filtered, the washed salt suspended in 25-50 ml. boiling 2N HCl, filtered, the colorless filtrate treated with 1-2 g. C, filtered, the light-yellow filtrate evapd. in vacuo, and the residue crystd. from Me₂CO-C₆H₆ yielded 6.8 g. I, m. 205.degree. (decompn.); tetra-Et ester (IIIa), m. 105.degree. (cf. Chattaway and Humphrey, C.A. 23, 3472). IIIa (3 g.) in 100 ml. 96% EtOH reduced 8 hrs. at 100.degree./100 atm. in the presence of 6 g. 5% Pt-Al₂O₃, filtered, the residue washed with 96% alc., and the filtrate evapd. in vacuo gave 2.8 g. 2,3,5,6-tetracarbethoxy-1,4-dihydropyrazine (IV), m. 127.0-7.5.degree., contg. 2 active H atoms, 4 EtO groups (by sapon. and EtO detns.), λ 277, 375 m.mu. (log ϵ 3.95, 3.80), ν 3420 cm.⁻¹ (in CCl₄), converted to IIIa by 48 hrs. treatment with 30% H₂O in 96% alc. at room temp. The formation of the highly stable IV was attributed to the presence of 2, probably mutually independent, mesomeric systems, an opinion supported by the resistance of pyromellitic acid (V) and its esters to reduction [cf. von Bayer, Ann. 166, 337 (1873)]. V (5 g.) in 100 ml. abs. MeOH satd. 1 hr. with dry HCl, the mixt. cooled to -5.degree., filtered, and the washed ppt. dried and recrystd. from dil. alc. gave 5.5 g. tetra-Me pyromellitate (Va), m. 146.degree.. Va (5 g.) in 100 ml. 96% alc. hydrogenated 8 hrs. at 150.degree./200 atm. in the presence of 5-6 g. Raney Ni, filtered, the filtrate evapd. in vacuo, and the residue crystd. from dil. alc. gave 4.5 g. 1,2,4,5-tetracarbomethoxycyclohexane, m. 125.degree. [differs from the m.p. given by Sieglitz and Horn (C.A. 47, 4907a)]. Va is resistant to reduction with Pt-Al₂O₃ or PtO₂ at 100.degree./150 atm.

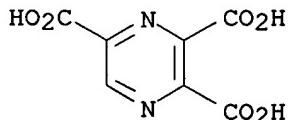
L7 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1956:4819 CAPLUS
 DN 50:4819
 OREF 50:1037b-i
 TI Nitration of phenazine
 AU Maffei, Silvio; Aymon, Marco
 CS Univ. Pavia, Italy
 SO Gazzetta Chimica Italiana (1954), 84, 667-73
 CODEN: GCITA9; ISSN: 0016-5603
 DT Journal
 LA Unavailable
 IT 43193-60-8, Pyrazinetetracarboxylic acid
 (prepn. of)
 RN 43193-60-8 CAPLUS
 CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB The uncertain results of the work of Claus [Ber. 8, 39 (1875)], Kehrmann and Havas (C.A. 7, 1503), and Albert and Duewell (C.A. 41, 4498c) induced M. and A. to take up the subject and attempt to obtain definite products by definite reactions. HNO₃-AcOH mixts. were found to be unsuitable, but gradual nitration was effected in H₂SO₄-fuming HNO₃ (d. 1.48) (I) or KNO₃ at 70-90.degree.. With stoichiometric amts. of phenazine (II) and nitrating agents, or with not too large an excess of agent, mononitration (never complete) takes place. II (9 g.) in 180 cc. H₂SO₄.H₂O (III) and 4.5 cc. HNO₃ (d. 1.48), heated 8 hrs. at 70.degree. (the mixt. is first red but fades), poured into ice-water, made alk. with NH₄OH, and the ppt. washed with H₂O, and purified by MeOH, give 0.7 g. 1-nitrophenzazine (IV), yellow, m. 195.degree. (cf. Preston, et al., C.A. 37, 642.6). It can also be purified by extg. a C₆H₆ soln. of the crude IV by 15% HCl, and evapg. the C₆H₆ soln. With a stoichiometric wt. of I or KNO₃, the yields of IV are smaller. Reduction of IV in 50% AcOH by Zn, the soln. made alk. with NH₄OH, and sublimation of the product, gives 1-aminophenazine, m. 175.degree.. I (45 cc.), added during 15 min. to 9 g. II in 180 cc. III at 75.degree., kept 8 hrs. at 75.degree., poured into ice-water, made alk. with NH₄OH, and the orange-yellow ppt. washed, gives 10.7 g. of a mixt. (V) of NO₂ derivs. contg. 20.88% N. This does not vary for preps. in the range of 70-90.degree.. V (1.08 g.) and 50 cc. concd. H₂SO₄, heated at 80.degree., poured into 500 cc. H₂O, the ppt. washed and suspended in 100 cc. H₂O, made alk. with 5 cc. 10% NaOH, 7 g. KMnO₄ added slowly to the suspension on a steam bath, the soln. concd. to 60 cc., 20 cc. Ba(OH)₂ water added, the ppt. taken up in a min. of boiling HCl, and the soln. let stand, ppts. pyrazinetetracarboxylic acid. V in C₆H₆, chromatographed on SiO₂ gel in darkness, eluted with C₆H₆, and the soln. evapd., gives a dinitro deriv. (VI), m. 343.degree.. From the green-yellow zone of the column is recovered, by soln. of the SiO₂ in NaOH, a dinitro deriv. (VII), m. 273.degree.. VI (0.54 g.) suspended in 150 cc. 90% AcOH, reduced at the b.p. by 1.2 g. Zn (added during 90 min.), the filtered soln. dild. with 150 cc. H₂O, the filtered soln. treated with NH₄OH until pptn. is

complete, the ppt. taken up in 100 cc. 2% HCl, boiled 2 hrs., clarified, made alk. with NH₄OH, and the ppt. purified by EtOH, gives 0.35 g. of 1,6-diaminophenazine (VIII), red, m. 245.degree.. VII (0.54 g.), reduced in the same way, gives 1,9-diaminophenazine (IX), violet-red, m. 264-5.degree.. VIII (0.21 g.) and 1 cc. 30% H₃PO₄ heated in a sealed tube 45 hrs. at 170.degree., taken up in H₂O, made alk. with NaOH, boiled, the filtered soln. acidified with HCl, extd. with Et₂O, the ext. washed, treated with dil. NaOH, and the violet-red alk. soln. acidified with HCl, ppt. 0.1 g. of a yellow compd. (X), m. 270-1.degree.. X (0.05 g.) in Et₂O and CH₂N₂ [from 1.5 g. (MeNH)₂C:NOH], let stand 48 hrs., extd. with HCl (1:1), and the ext. made alk. with KOH, ppts. 1,6-dimethoxyphenazine, m. 246.degree. (from EtOH) (cf. Pachter and Kloetzel, C.A. 46, 10183b). By the same procedure, 0.21 g. IX gives 0.09 g. 1,9-dimethoxyphenazine, m. 259.degree. (cf. Serebryanyi and Chernetskii, C.A. 46, 6654g). 2,4-Dinitrophenazine (2.5 g.), heated in a CO₂ current slowly to 360.degree. (nitrous vapors are evolved) and held 2 hrs. at 360.degree., extd. with hot C₆H₆, the ext. extd. with concd. HCl, the ext. dried, and the ppt. (0.32 g.) purified by glacial AcOH, gives 2-nitrophenazine, yellow, m. 226.degree..

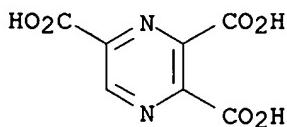
L7 ANSWER 42 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1954:25072 CAPLUS
 DN 48:25072
 OREF 48:4553b-h
 TI Synthetic antituberculous agents. II. Some thienylquinoxalines
 AU Musante, Carlo; Parrini, Valerio
 CS Univ. Florence, Italy
 SO Sperimentale, Sezione di Chimica Biologica (1952), 3, 140-53
 CODEN: SSCBAX; ISSN: 0371-2869
 DT Journal
 LA Unavailable
 IT 23046-95-9, 2,3,5-Pyrazinetricarboxylic acid
 (prepn. of)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



GI For diagram(s), see printed CA Issue.
 AB cf. C.A. 45, 5879f. 2-Thienylglyoxal (I), m. 87.degree., was prep'd. according to Kipnis and Ornfelt (C.A. 41, 1661c). Short refluxing of 1 g. I in EtOH with 0.46 g. NH₂OH.HCl and 0.42 g. Na₂CO₃ in H₂O gives I monoxime, m. 109-11.degree.. Refluxing 1.6 g. I in EtOH with 2.1 g. NH₂OH.HCl and 4.08 g. NaOAc in H₂O gives 2-thienylglyoxime, m. 151.degree.. Refluxing 1.6 g. I in EtOH with 1.1 g. H₂NNHCONH₂.HCl and 1.4 g. NaOAc in H₂O gives I semicarbazone (II), m. 216-17.degree.. Heating 0.5 g. II with K₂CO₃ in H₂O and adding HCl gives 5-(2-thienyl)-3-hydroxy-1,2,4-triazine, m. 273-5.degree. (decompn.). Refluxing 1.6 g. I with 0.9 g. H₂NNHCSNH₂ in H₂O-EtOH gives I thiosemicarbazone, which, heated with K₂CO₃ in H₂O, gives 3-mercaptop-5-(2-thienyl)-1,2,4-triazine, m. 238.degree.. I gives with 30%

NH₃ in EtOH yellow crystals, m. 215.degree., presumably 2-C₄H₃SC:N.C(OH):C(C₄H₃S-2).N:CH. I (1 g.) gives with 0.1 g. KCN in 50% EtOH red 2-C₄H₃SCOCH(OH)COCO₂C₄H₃S-2, m. 228.degree. (from AcOH). Refluxing 5 g. I and 3.3 .omicron.-C₆H₄(NH₂)₂ in EtOH gives 3-(2-thienyl)quinoxaline (III), m. 118.degree. (from EtOH). I and 3,4-(H₂N)₂C₆H₃Me give the 7-Me deriv. of III, m. 110-12.degree.; 7-Cl, m. 119-21.degree., the 7-carboxylic acid, m. 288-90.degree.. I and 1,2-C₁₀H₆(NH₂)₂ give 2-(2-thienyl)benzo[h]quinoxaline (IIIA), m. 213-15.degree.. I and 2,4,5-HO(H₂N)₂C₆H₂CO₂H in EtOH give yellow 3-(2-thienyl)-6-hydroxy-7-quinoxalinecarboxylic acid, m. 293.degree. (decompn.). Adding 1.7 g. III gradually to 20 cc. H₂SO₄ and 20 cc. HNO₃ at a temp. below 15.degree. gives a di-O₂N deriv. (IV), m. 125.degree., oxidized by refluxing with KMnO₄ in H₂O to 2,5,6-piperazinetricarboxylic acid, m. 190-1.degree.. Treating 1.3 g. I with 15 cc. HNO₃ and 45 cc. H₂SO₄ gives 3-(2-thienyl)mononitroquinoxaline, m. 227.degree., in which the position of the NO₂ in the C₆H₄ ring is uncertain. Refluxing 3 g. I and 2.5 2,3-(H₂N)₂C₆H₃NO₂ in EtOH gives yellow 3-(2-thienyl)-8-nitroquinoxaline, m. 170-1.degree.; 7-O₂N analog, m. 245-7.degree.. I and 1,5,2,3-(O₂N)₂C₆H₂(NH₂)₂ give 3-(2-thienyl)-6,8-dinitroquinoxaline, yellow crystals, m. 252.degree. (from AcOH). Adding 1 g. 3-(2-thienyl)-7-methylquinoxaline to 10 cc. H₂SO₄ and 10 cc. HNO₃ at 0.degree. gives the yellow tri-O₂N deriv., m. 185.degree., with two NO₂ groups at the 3,4-positions of the thienyl group and 1 in the benzene ring in an uncertain position. IIIA (0.5 g.) with 15 cc. H₂SO₄ and 15 cc. HNO₃ at 10-15.degree. gives a yellow 2-(2-thienyl)x,6-dinitrobenzo[h]quinoxaline, m. 288.degree., with one NO₂ in each of the benzene rings. Nitration of .omicron.-AcOC₆H₄NHAc gives a mixt. of the 3-and 5-nitro derivs., 5 g. of which, added to 20 g. SnCl₂ in 80 cc. HCl contg. some metallic Sn, gives after removal of the Sn with H₂S, crystals of 2,3-(H₂N)₂C₆H₃OH-HCl (V), m. 275.degree.. V heated briefly with phenanthrenequinone in AcOH gives 14-hydroxy dibenzo[a,c]phenazine, m. 260.degree.. Heating 1 g. I in EtOH with 1.23 g. V in H₂O gives 3-(2-thienyl)-5-hydroxyquinoxaline.

L7 ANSWER 43 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1950:40651 CAPLUS
 DN 44:40651
 OREF 44:7772c-h
 TI The reductone series
 AU v. Euler, Hans; Hasselquist, Hans
 CS Stockholm Univ.
 SO Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1950), 69, 402-9
 CODEN: RTCPB4; ISSN: 0370-7539
 DT Journal
 LA English
 IT 23046-95-9, 2,3,5-Pyrazinetricarboxylic acid
 (prepn. of)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



GI For diagram(s), see printed CA Issue.

AB New reductone esters are described, including triose-reductone monoacetate (I), m. 99-101.degree., from the Na salt of triose-reductone (II) in C6H6 with AcCl; it is sol. in alc., Me2CO, C6H6, less sol. in H2O. FeCl3 added to an alc. soln. gives a brown-red color. Quant. titration with Tillman reagent (alk. at 20.degree.) shows the presence of one enediol group per mol. of sapond. acetate. CH2N2 liberates N and methylation of the free OH is finished in ether soln. to give a colorless oil, sol. in alc., ether, Me2CO, and CHCl3. In alc. soln. with o-C6H4(NH2)2 (III) I gives a product m. 132-3.degree., analogous to the quinoxaline deriv. from triose-reductone monochloroacetate (IV). The structure of IV, made by known means from ClCH2COCl and II, is studied further. IV with III gives a yellow quinoxaline deriv. sol. in CHCl3 and HOAc, forms in HCl the HCl salt, which with EtOAc gives dark green prisms, m. 220.degree.. Oxidation with KMnO4 and isolation of the Ag salt of pyrazinetricarboxylic acid indicates that III reacts with groups 2 and 3 of the reductone and esterification with ClCH2CO2H takes place at enediol group 1. II and p-H2NC6H4COOH (1:1) in 30% HOAc heated with H2O give a yellow compd., p-HO2CC6H4N:CHC(OH):CHOH, m. 264.degree., showing on Tillman titration 1 enediol group, in contrast to the work of Forrest and Walker (C.A. 42, 4176f). II (230 mg.) with 960 mg. 5,2-H2N(HO)C6H3CO2H.HCl gives 60 mg. of the reductone-5-aminosalicylic compd., darkens 234.degree., decomp. at higher temp., analyzed by alkalimetric and reductometric titration. II (440 mg.) in a few ml. H2O with 765 mg. 4,2-H2N(HO)C6H3CO2H in 150 ml. H2O gives 780 mg. condensation product (from Me2CO), m. 235-7.degree. (decompn.).

L7 ANSWER 44 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1949:46462 CAPLUS

DN 43:46462

OREF 43:8394b-f

TI Syntheses in the pyrazine series: the proof of the structure and the reactions of 2,6-dibromopyrazine

AU Schaaf, Kurt H.; Spoerri, Paul E.

SO Journal of the American Chemical Society (1949), 71, 2043-7
CODEN: JACSAT; ISSN: 0002-7863

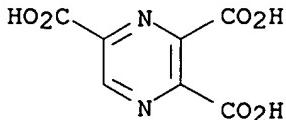
DT Journal

LA Unavailable

IT 23046-95-9, 2,3,5-Pyrazinetricarboxylic acid
(prepn. of)

RN 23046-95-9 CAPLUS

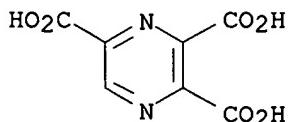
CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



AB The dibromopyrazine of Erickson and Spoerri (C.A. 40, 2835.3) is shown to be the 2,6-deriv. (I). I (1.19 g.), 1.34 g. CuCN, and 0.07 g. CuSO₄, gradually heated (25 min.) to 143-5.degree. give 8.85% 2,6-dicyanopyrazine (II), m. 162-3.degree. (m.p. cor.), and 13.5% 2-bromo-6-cyanopyrazine, m. 72-3.degree.. II (0.13 g.) and 0.52 ml. concd. H₂SO₄, heated 2 hrs. at 70.degree. and 1 hr. at 115-17.degree., give 0.12 g. 2,6-

pyrazinedicarboxamide, does not m. at 355.degree.. II (0.37 g.) and 0.47 g. NaOH in 9.4 ml. H₂O, heated 2 hrs. on the steam bath (NH₃ removed by a stream of N), gives 67% 2,6-pyrazinedicarboxylic acid (III), pale yellow, m. 218.degree. (decompn.). Details are given of the oxidation of 2-methylquinoxaline by alk. KMnO₄ to 2,3,6-pyrazinetricarboxylic acid (25.2%); decarboxylation gives a mixt. of III and the 2,5-isomer. The bromopyrazine of E. and S. (15.9 g.) and 15 g. POBr₃, added to a mixt. of 13.6 g. PBr₃ and 8 g. Br and heated 1 hr. at 105-10.degree., give 16.7% I. I (1.19 g.) in 3.6 ml. MeOH, added to 0.59 g. Na in 11.8 ml. MeOH and refluxed 72 hrs., gives 0.5 g. 2,6-dimethoxypyrazine, b10 75.degree., m. 31-1.5.degree. [a hydrate(?) m. 47.degree.]; the 2,6-di-EtO homolog, b5 68.degree., m. 27-7.5.degree.. Me₂CHONa and I in iso-PrOH, refluxed 1.5 hrs., give 63.3% of the 2,6-bis(1-methylethoxy) compd., b10 105-6.degree.. I (1.19 g.) in 4.6 ml. EtOH and 0.91 g. NaOH in 4.6 ml. H₂O refluxed 5 hrs. give 0.445 g. 6-bromo-2-hydroxypyrazine, m. 209.degree. (decompn., sealed tube); Bz deriv., m. 67-8.degree. (98% of crude product). Benzoxyypyrazine, m. 73-4.degree. (2.65 g. from 2.4 g. hydroxypyrazine). I (1.19 g.) and 40 ml. 28.5% NH₄OH, heated 21 hrs. at 195-200.degree., give 81.8% 2,6-diaminopyrazine (IV), pale yellow, m. 136.degree. (decompn.), fairly sensitive to oxidation. IV (0.44 g.) in 4.4 ml. C₅H₅N, treated with 2.06 g. p-AcNHC₆H₄SO₂Cl (in a N atm.), stirred 16 hrs. at room temp., and kept 20 hrs. at 2.degree., gives 1.9 g. crude 2,6-bis(N₄-acetylsulfanilamido)pyrazine, m. 220-1.degree., analyzed as the acetate, yellow-orange, m. 257.degree. (decompn.); hydrolysis with 6 N HCl gives 42.9% 2,6-disulfanilamidopyrazine, m. 252.5.degree. (decompn.).

L7 ANSWER 45 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1949:22520 CAPLUS
 DN 43:22520
 OREF 43:4227d-f
 TI Reductone. III
 AU v. Euler, Hans; Hasselquist, Hans; Loov, Uno
 SO Arkiv Kemi, Mineral. Geol. (1948), 26A(No. 17), 12 pp.
 DT Journal
 LA German
 IT 23046-95-9, 2,3,5-Pyrazinetricarboxylic acid
 (prepn. of)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



AB Dissolve 750 mg. l-leucine in a little water by dropwise addn. of 4 N HCl, add 500 mg. reductone, heat on the steam bath 5 min., allow to stand 3 hrs., filter, and recrystallize the (dihydroxypropylidene)leucine, m. 176.0-6.5.degree., from alc. Consumption of Tillman reagent shows that the double bond is still present. The trisemicarbazone of oxidized reductone (mesoxalaldehyde) m. 249.5.degree. (decompn.). Heat 0.5 g. reductone in 2 cc. water with 0.75 g. aniline in 5 cc. of 4 N HCl for 5 min. on a boiling water bath, cool, and filter the reductone-anilide-HCl, m. 260.degree.. Addn. of NaOAc ppts. the free anilide base, m.

64.degree.. The p-nitroanilide is obtained in the same manner as red crystals, yellow on recrystn. from boiling glacial AcOH, m. 235-7.degree.. 2,3,5-Pyrazinetricarboxylic acid was isolated from the oxidation of the quinoxaline deriv. of oxidized reductone with KMnO₄. The quinoxaline deriv. (purified by sublimation) was identified as the expected 2-quinoxalinecarboxaldehyde by the m.p. of its phenylhydrazone.

L7 ANSWER 46 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1946:27766 CAPLUS

DN 40:27766

OREF 40:5458a-b

TI Pyrazinetetracarboxylic acid

IN Ramsey, Albert R. J.

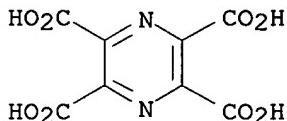
PA Mead Johnson & Co.

DT Patent

LA Unavailable

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|-----------------|----------|-----------------|------|
| PI | GB 565778 | | 19441128 | GB | |
| IT | 43193-60-8 , Pyrazinetetracarboxylic acid
(prepn. of) | | | | |
| RN | 43193-60-8 CAPLUS | | | | |
| CN | Pyrazinetetracarboxylic acid (6CI, 9CI) | (CA INDEX NAME) | | | |



AB Phenazine, phenazine oxide, or other compd. having the phenazine ring structure are oxidized with KMnO₄ or NaMnO₄ to form the K or the Na salt of pyrazinetetracarboxylic acid. These are treated with hot 20% HCl to liberate the acid.

L7 ANSWER 47 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1946:25760 CAPLUS

DN 40:25760

OREF 40:5074a-c

TI Pyrazine from pyrazinecarboxylic acids

IN Ramsey, Albert R. J.

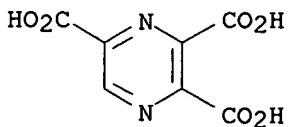
PA Mead Johnson & Co.

DT Patent

LA Unavailable

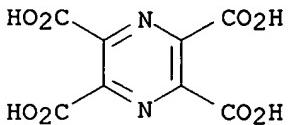
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|-----------------|----------|-----------------|------|
| PI | GB 560965 | | 19440428 | GB | |
| IT | 23046-95-9 , Pyrazinetricarboxylic acid 43193-60-8 ,
Pyrazinetetracarboxylic acid
(decarboxylation of) | | | | |
| RN | 23046-95-9 CAPLUS | | | | |
| CN | Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) | (CA INDEX NAME) | | | |



RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



AB Pyrazine, which is an intermediate in the synthesis of 2-sulfanilamidopyrazine, is produced from pyrazinecarboxylic acids by suspending the acids in an inert, high-boiling liquid, e.g., di-Bu phthalate or di-Et phthalate, and heating the suspension until decarboxylation occurs and the pyrazine distils from the reaction mixt. Anhyd. pyrazinemonocarboxylic acid was suspended in di-Bu phthalate. The temp. of the mixt. was raised to 190.degree. and held there for 1 hr., then gradually raised to 215.degree.. Pyrazine distd. from the reaction mixt. as a colorless liquid which crystd. immediately. The yield of pyrazine was 90% of theory. A similar process was followed with 2,3-pyrazinedicarboxylic acid, with 2,3,5-pyrazinetricarboxylic acid, and with pyrazinetetracarboxylic acid.

L7 ANSWER 48 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1929:29324 CAPLUS

DN 23:29324

OREF 23:3472e-i,3473a-c

TI Action of o-phenylenediamines upon dihydroxytartric acid

AU Chattaway, Frederick D.; Humphrey, William G.

SO J Chem. Soc. (1929) 645-51

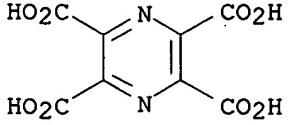
DT Journal

LA Unavailable

IT 43193-60-8, 2,3,5,6-Pyrazinetetracarboxylic acid
(and derivs.)

RN 43193-60-8 CAPLUS

CN Pyrazinetetracarboxylic acid (6CI, 9CI) (CA INDEX NAME)



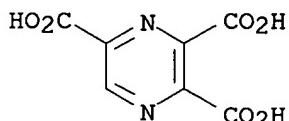
GI For diagram(s), see printed CA Issue.

AB When Na dihydroxytartrate is heated with aq. o-C₆H₄(NH₂)₂, 2 mols of the diamine react with 1 mol. only of the salt, forming quinoxaline-2,3-

dicarboxy-o-phenylenediamide (I); Na dihydroxytartrate is only very sparingly sol. in H₂O and any excess above 1 mol. remains in suspension unchanged. When the filtered alk, soln. is partly neutralized with HCl, I seps. as a colorless cryst. powder, stable in neutral soln. and dissolving readily in cold dil. aq. alkali, from which it is repptd. on addn. of a deficiency of acid. It dissolves in hot dil. HCl (1:50), but on cooling, the o-phenylenediamine salt, (II) of quinoxaline-2,3-dicarboxylic acid (III) seps; whereas, if it is dissolved in hot moderately concd. HCl (1:1), III sepd. on cooling o-phenylenediamine-HCl remaining in soln. The II and III may consequently be obtained directly from the original yellow condensation soln., the former by making the soln. weakly acid with HCl, and the latter by satg. it with gaseous HCl. Attempts to acetylate or benzoylate I by the usual methods also cause decompns., with formation of the di-Ac or the di-Bz deriv. of o-C₆H₄(NH₂)₂. Heated with Ac₂O, III yields the anhydride, while dry NH₃ on this anhydride in C₆H₄ suspensions gives the NH₄ salt of 3-carbamylquinoxaline-2-carboxylic acid (IV), from which the acid itself may be obtained on acidification. This amic acid is converted into the corresponding imide (V) on being heated above its m. p., and into the Ac deriv. of the imide on boiling with Ac₂O. On being heated above its m. p., III decompns., evolving CO₂ and yielding a small quantity (10%) of quinoxaline; better yields (30%) of this base are obtained by heating the NH₄ salt of the acid. In common with other N bases, quinoxaline forms a stable, well-crystd. monotetrachloroiodide. Similarly, Na chloroquinoxaline-2,3-dicarboxy-p-chloro-o-phenylenediamide, from which the p-chloro-o-phenylenediamine salt of 6-chloroquinoxaline-2,3-dicarboxylic acid, and the free acid (VI) are obtained by heating with dil. and with concd. HCl, resp. p-Bromo-o-phenylenediamine gives the corresponding Br deriv. These halogen-substituted derivs. are considerably less sol. than the unsubstituted compds., and are therefore more readily prep'd. and purified; otherwise their reactions are analogous. The following compds. were prep'd. and characterized: I, m. 184.degree. (decompn.). II, lemon-yellow, m. 186.degree. (decompn.). III, prisms contg. 2 mols. H₂O of crystn., m. 190.degree. (decompn. after loss of H₂O at 110.degree.); Et ester, C₁₄H₁₄O₄N₂, prisms, m. 83.degree.; NH₄ salt, m. 220-30.degree.; anhydride, pale yellow prisms decompg. and charring 250-60.degree.. IV, m. 190-5.degree. (decompn.). V, pale yellow, m. about 260.degree. (decomp.); Ac deriv., leaflets, m. about 220.degree. (decompn.). Quinoxaline mono-tetrachloroiodide, C₆H₄N₂. HICl₄, m. 125-30.degree. (decompn.). 6-Chloroquinoxaline-2,3-dicarboxy-p-chloro-o-phenylenediamide, C₁₆H₈O₂N₄C₁₂, m. 207.degree. (decompn.) (p-chloro-o-phenylenediamine salt, C₁₆H₁₈O₄N₄C₁₃, m. 205.degree. (decompn.)); 6-bromoquinoxaline-2,3-dicarboxy-p-bromo-o-phenylenediamide, m. 198.degree. (decompn.) (p-bromo-o-phenyleneamine salt, m. 199.degree. (decompn.)). VI, m. 175.degree. (decompn.) (anhydride, m. 235-40.degree. (decompn.), Et H ester, m. 159.degree.; di-Et ester, m. 60.degree.; NH₄ salt, m. 215-25.degree. (decompn.)). 6-Chloroquinoxaline, m. 60.degree., 6-Bromoquinoxaline-2,3-dicarboxylic acid, m. 172.degree. (decompn.) (anhydride, m. 235-45.degree. (decompn.)), Et H ester, m. 161.degree., di-Et ester, m. 69.degree., NH₄ salt, m. 235-40.degree. (decompn.)). 6-Bromoquinoxaline, m. 56.degree.. Pyrazinetetracarboxylic acid (by oxidation of the anhydride of III), m. 205.degree. (decompn.), di-K di-H salt is cryst., tetra-Et ester, m. 104.degree..

L7 ANSWER 49 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1915:15638 CAPLUS
 DN 9:15638
 OREF 9:2517h-i,2518a-g

TI Condensation of acid chlorides with the ethyl ester of (a) cyanoacetic acid, (b) malonic acid, and (c) acetoacetic acid. II. Experiments on ethyl .gamma.-ethoxyacetacetate.
 AU Bradshaw, John; Stephen, Henry; Weizmann, Charles
 CS Manchester
 SO Journal of the Chemical Society, Abstracts (1915), 107, 803-13
 CODEN: JCSAAZ; ISSN: 0590-9791
 DT Journal
 LA Unavailable
 IT 23046-95-9, 2,3,5-Pyrazinetricarboxylic acid
 (and salts)
 RN 23046-95-9 CAPLUS
 CN Pyrazinetricarboxylic acid (6CI, 8CI, 9CI) (CA INDEX NAME)



GI For diagram(s), see printed CA Issue.
 AB cf. C. A. 8, 904. NaCH(CO₂Et)₂ reacting with o-C₅H₄(CO)2NHCH₂COCl gave rise to ethyl bisphthaliminoacetylmalonate (A), [o-C₆H₄(CO)2NCH₂CO]2C(CO₂Et)₂, needles, m. 176.degree.. 1-Phenyl-3-phthaliminoethyl-5-pyrazolone, o-C₆H₄(CO)2NCH₂C:N.NPh.CO.CH₂, microcrystals, m. 192.degree. (decompn.), prep'd. from PhHNH₂ and Et phthaliminoacetacetate, when hydrolyzed with alc. KOH yielded 1-phenyl-3-phthalaminomethyl-5-pyrazolone (B), yellow powder, m. 164.degree. (decompn.). Et phthaliminoacetylmalonate (C) and PhHNH₂ condensed to form ethyl 1-phenyl-3-phthaliminoethyl-5-pyrazolone-4-carboxylate (D), o-C₆H₄(CO)2NHCH₂C:N.NPh.CO.CHCO₂Et, yellow powder, m. 215.degree., from which the corresponding (impure) phthalamino deriv. was obtained. On fusion, the latter evolved CO₂ and yielded (B). By warming an excess of PhHNH₂ with (A) in 50% AcOH, a mixt. of (D) and phthaliminoacetylphenylhydrazide (E), o-C₆H₄(CO)2NCH₂CONHNHPh, needles from MeOH, m. 199.degree., was obtained. (E) was readily formed by condensing o-C₆H₄(CO)2NCH₂COCl with PhHNH₂. By treating (C) in KOH with NaNO₂ and subsequently adding dil. H₂SO₄, .alpha.-hydroxyimino-.gamma.-phthaliminoacetone, o-C₆H₄(CO)2NCH₂CO.CH:NOH, prisms from PhH, m. 156.degree. (decompn.), was obtained. When Et₂NH was gradually added to an ice-cold mixt. of 2 mols. EtOCH₂COCH₂CO₂Et and 1 mol. AcH, ethyl ethylidenebis-.gamma.-ethoxyacetacetate, needles (from MeOH), m. 96.degree., was formed, which when heated for 20 hrs. with aq. H₂SO₄, or preferably when dissolved in an equal vol. of PhH and satd. with HCl, yielded 1-ethoxy-4-methyl-2-ethoxymethylcyclohexen-6-one, b14 157.degree., possessing a terpene-like odor; semicarbazone, plates, m. 232.degree. (decompn.). EtOCH₂COCHMeCO₂Et (F), b16 115.degree., and EtOCH₂COCHEtCO₂Et (G), b15 124.degree. (cf. Johnson, J. Chem. Soc. 35, 582), were formed by treating 1 mol. EtOCH₂COCHNaCO₂Et in EtOH with 1 mol. of MeI and EtI, resp. Similar reactions led to the formation of ethyl .gamma.-ethoxy-.alpha.-propylacetacetate, b18 137.degree.; the corresponding .alpha.-isopropylacetacetate, b18 131.degree., and .alpha.-isobutylacetacetate, b10 128.degree., MeCH₂COCH₂OEt, b. 146.degree., and EtCH₂COCH₂OEt, b. 167.degree. (cf. B. acte. ehal and Sommelet, Compt. rend. 138, 89), were obtained in poor yield from (F) and

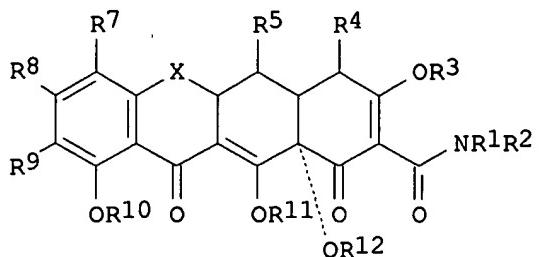
(G), resp., by heating the esters with H₂O in sealed tubes at 210.degree. for 1 hr. The other alkylacetooacetates were hydrolyzed in the same way, "acid hydrolysis" being the principal reaction as shown by the titration of the acid formed during the reaction. EtOCH₂COCl and NH₃ in dry Et₂O yielded EtOCH₂CONH₂, needles from PhH, m. 80-2.degree. (cf. Sommelet, Ann. chim. phys. [8] 9, 493). One mol. of EtOCH₂COCH:NOH reacting with 1 mol. of o-C₆H₄(NH₂)₂ in 2 mols. of glacial AcOH gave rise to 2-ethoxymethylquinoxaline (H), CH:N.C₆H₄.N:CCH₂OEt, b13 144.degree., neutral to litmus in aq. soln.; chloroplatinate, microcrystals, decomp. 250.degree.; picrate, yellow powder, m. 216.degree.. Upon gradual oxidation with alk. KMnO₄, (A) yielded pyrazine-2,5,6-tricarboxylic acid, HO₂CC:C(CO₂H).N:CH.C(CO₂H):N, silky needles, m. 191.degree. (decompn.), isolated as the barium salt. The normal copper salt forms green microcrystals from aq. MeOH.

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L8 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2003:777531 CAPLUS
 DN 139:292094
 TI Preparation of substituted tetracycline compounds for the treatment of bacterial infections and neoplasms
 IN Nelson, Mark L.; Ohemeng, Kwasi; Frechette, Roger; Abato, Paul; Assefa, Haregewein; Bandarage, Upul; Berniac, Joel; Bhatia, Beena; Chen, Jackson; Ismail, Mohamed Y.; Kim, Oak A.; Mathews, Jude; McIntyre, Laura; Nihlawi, Mohammed; Pearson, Andre; Reddy, Laxma; Sheahan, Paul; Sizensky, Emmanuel; Tourigny, Justin; Verma, Atul K.; Viski, Peter; Warchol, Tadeusz
 PA Paratek Pharmaceuticals, Inc., USA
 SO PCT Int. Appl., 118 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|------------------|----------|
| PI | WO 2003079984 | A2 | 20031002 | WO 2003-US8324 | 20030318 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | US 2002-366915PP | 20020321 |
| | | | | US 2002-367045PP | 20020321 |
| | | | | US 2002-367048PP | 20020321 |
| | | | | US 2002-395468PP | 20020712 |
| | | | | US 2003-440305PP | 20030114 |

OS MARPAT 139:292094
 GI



AB Novel substituted tetracycline compds. of formula I [X = (substituted) CH, S, (substituted) NH, O; R1, R2 = H, alkyl, arylalkyl, aryl, heterocyclic, heteroarom.; R4 = (substituted) NH2, alkyl, aryl, OH, halo, H; R5 = OH, H, SH, alkanoyl, aroyl, alkyl, alkoxy, alkylthio, etc.; R7 = NO2, heterocyclic, alkyl, aminoalkyl, aryl, alkoxy, etc.; R8, R9 = H, OH, halo, SH, nitro, alkyl, aryl, alkoxy, alkylamino, etc.; R3, R10, R11, R12 = H, prodrug moiety] are prep'd. These tetracycline compds. can be used to treat numerous tetracycline compd.-responsive states, such as bacterial infections and neoplasms, as well as other known applications for minocycline and tetracycline compds. in general, such as blocking tetracycline efflux and modulation of gene expression. Thus, 7-phenylsancycline was prep'd. in 2 steps from sancycline and phenylboronic acid.

L8 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2003:737741 CAPLUS
 DN 139:261323
 TI Preparation of aminocarbonyl derivatives as inhibitors of histone deacetylase
 IN Van Emelen, Kristof; De Winter, Hans Louis Jos; Dyatkin, Alexey Borisovich; Verdonck, Marc Gustaaf Celine; Meerpoel, Lieven
 PA Janssen Pharmaceutica N.V., Belg.
 SO PCT Int. Appl., 58 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 8

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|--|
| PI | WO 2003076421 | A1 | 20030918 | WO 2003-EP2511 | 20030311 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG |
| | | | | | US 2002-363799PP 20020313 |

PATENT FAMILY INFORMATION:
 FAN 2003:737586

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----|---|--|---------------------------|------------------|----------|
| PI | WO 2003075929 | A1 | 20030918 | WO 2003-EP2515 | 20030311 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | US 2002-363799PP 20020313 | | |
| FAN | 2003:737718 | | | | |
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI | WO 2003076395 | A1 | 20030918 | WO 2003-EP2512 | 20030311 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | US 2002-363799PP 20020313 | | |
| | | | | WO 2002-EP14074A | 20021210 |
| FAN | 2003:737723 | | | | |
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI | WO 2003076400 | A1 | 20030918 | WO 2003-EP2514 | 20030311 |
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| FAN | 2003:737724 | | | | |
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI | WO 2003076401 | A1 | 20030918 | WO 2003-EP2517 | 20030311 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, | | | | |

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US 2002-363799PP 20020313
 WO 2002-EP14481A 20021218

FAN 2003:737742

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|---------------------------|
| PI | WO 2003076422 | A1 | 20030918 | WO 2003-EP2516 | 20030311 |
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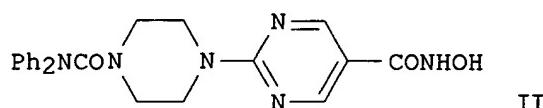
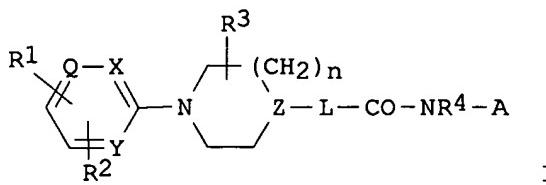
FAN 2003:737750

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|---------------------------|
| PI | WO 2003076430 | A1 | 20030918 | WO 2003-EP2513 | 20030311 |
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FAN 2003:737757

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|---------------------------|
| PI | WO 2003076438 | A1 | 20030918 | WO 2003-EP2510 | 20030311 |
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 GI



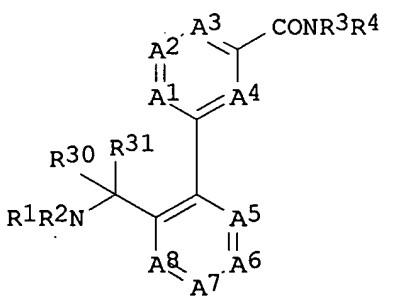
AB The title compds. I [Q, X, Y = N, (un)substituted CH; R1 = (un)substituted CONH₂, NHCHO, COalkanediylSH, CONHOH, NHCOC:NHOH or other Zn-chelating group; R2 = H, halogen, OH, amino, NO₂, alkyl, alkoxy, CF₃, dialkylamino, NHOH, naphthalenylsulfonylpyrazinyl; R3 = H, OH, amino, (un)substituted alkyl, alkoxy, CONH₂, CO₂H; R4 = H, alkyl, cycloalkyl, hydroxylalkyl, alkoxyalkyl, dialkylaminoalkyl, aryl; L = bond, NH, alkanediylamino; A = (un)substituted Ph, cyclohexyl, heterocyclic, heteroaryl, naphthyl; n = 0-3] were prep'd. for use as histone deacetylase inhibitors in the treatment of proliferative diseases. Thus, the carbamoylpiperazinylpyrimidinecarboxamide II was prep'd. from piperazine, Et 5-methylsulfonylpyrimidine-2-carboxylate, and Ph₂NCOCl in 5 steps. II had pIC₅₀ for inhibition of histone deacetylase of 7.127 and for antiproliferative activity against A2780 cells of 6.114.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2002:428866 CAPLUS
 DN 137:20297
 TI Preparation of ortho-substituted and meta-substituted bisaryl compounds as potassium channel blockers
 IN Peukert, Stefan; Brendel, Joachim; Hemmerle, Horst; Kleemann, Heinz-Werner
 PA Aventis Pharma Deutschland GmbH, Germany
 SO PCT Int. Appl., 67 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| PI | WO 2002044137 | A1 | 20020606 | WO 2001-EP13294 | 20011117 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, | | | | |

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
 RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ,
 VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 DE 2000-10059418A 20001130
 DE 10059418 A1 20020620 DE 2000-10059418 20001130
 AU 2002027931 A5 20020611 AU 2002-27931 20011117
 DE 2000-10059418A 20001130
 WO 2001-EP13294W 20011117
 EE 200300183 A 20030616 EE 2003-183 20011117
 DE 2000-10059418A 20001130
 WO 2001-EP13294W 20011117
 EP 1339675 A1 20030903 EP 2001-989479 20011117
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 DE 2000-10059418A 20001130
 WO 2001-EP13294W 20011117
 US 2003013719 A1 20030116 US 2001-995771 20011129
 US 6605625 B2 20030812 DE 2000-10059418A 20001130
 NO 2003002438 A 20030709 NO 2003-2438 20030528
 DE 2000-10059418A 20001130
 WO 2001-EP13294W 20011117
 OS MARPAT 137:20297
 GI



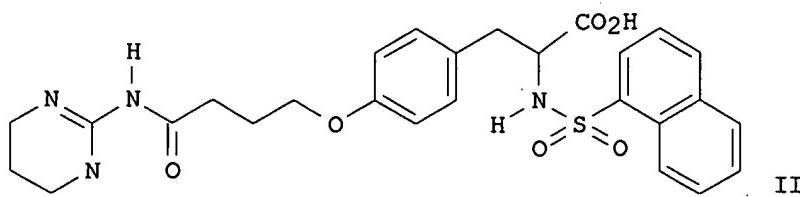
AB . Title compds. [I; A1-A8 = N, CH, CR5; whereby >4 of A1-A8 = CH; R1 = CO₂R₉, SO₂R₁₀, COR₁₁, C(O)NR₁₂R₁₃, C(S)NR₁₂R₁₃; R₉-R₁₂ = C_xH_{2x}R₁₄; x = 0-4; R₁₄ = alkyl, cycloalkyl, CF₃, C₂F₅, C₃F₇, CH₂F, CHF₂, OR₁₅, SO₂Me, (substituted) Ph, naphthyl, etc.; R₁₅ = alkyl, cycloalkyl, (substituted) Ph; R₁₃ = H, alkyl, CF₃; R₂ = H, alkyl, CF₃; R₃ = CyH_{2y}R₁₆, etc.; y = 0-4; R₁₆ = alkyl, cycloalkyl, CF₃, C₂F₅, C₃F₇, CH₂F, CHF₂, OR₁₇, SO₂Me, (substituted) Ph, naphthyl, etc.; R₁₇ = H, alkyl, cycloalkyl, (substituted) Ph, pyridyl; R₄ = H, alkyl, CF₃; or R₃R₄ = (O-, S-, NH-, N(methyl)-, N(benzyl)-interrupted) C₄₋₅ alkylene; R₅ = F, Cl, Br, I, CF₃, NO₂, cyano, CO₂Me, COMe, amino, OH, alkyl, alkoxy, etc.; R₃₀, R₃₁ = H, alkyl; or R₃₀R₃₁ = C₂ alkylene], were prep'd. Thus, 1-[6-(2-aminomethylphenyl)pyridin-2-yl]-N-(4-methoxyphenyl)amide in CH₂C₁₂ was stirred with 4-methoxyphenylacetyl chloride and N-ethyldiisopropylamine

overnight to give 78% 1-[6-(2-(4-methoxyphenyl)acetylamino)methylphenyl]pyridin-2-yl]-N-(4-methoxyphenyl)amide. Several I inhibited Kv1.5 human channel with IC₅₀ = 2 - <100 .μ.M.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2000:573545 CAPLUS
 DN 133:164327
 TI Preparation of N-arylsulfonyl-O-[(tetrahydropyrimidinylcarbamoyl)propyl]tyrosine derivatives and analogs as vitronectin .alpha.v.beta.3 receptor inhibitors
 IN Peyman, Anuschirwan; Knolle, Jochen; Scheunemann, Karlheinz; Will, David William; Carniato, Denis; Gourvest, Jean-Francois; Gadek, Thomas R.; Bodary, Sarah Catherine
 PA Aventis Pharma Deutschland G.m.b.H., Germany; Genentech, Inc.
 SO Eur. Pat. Appl., 28 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|---|------------|
| PI | EP 1028114 | A1 | 20000816 | EP 1999-102916 | 19990213 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | |
| | WO 2000047564 | A1 | 20000817 | WO 2000-EP895 | 20000204 |
| | RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | EP 1999-102916 A 19990213 | |
| | EP 1155003 | A1 | 20011121 | EP 2000-905022 | 20000204 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | EP 1999-102916 A 19990213 | |
| | JP 2002536438 | T2 | 20021029 | WO 2000-EP895 | W 20000204 |
| | | | | JP 2000-598485 | 20000204 |
| | | | | EP 1999-102916 A 19990213 | |
| | US 6340679 | B1 | 20020122 | WO 2000-EP895 | W 20000204 |
| | | | | US 2000-502577 | 20000211 |
| | | | | EP 1999-102916 A 19990213 | |
| OS | MARPAT 133:164327 | | | | |
| GI | | | | | |

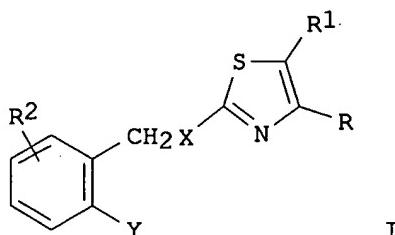


AB RNHC(:NR)NHCO(CH₂)₃Z1CH₂CH(COR2)NR4SO₂R1 [I; RR = (CH₂)₂-4; R1 = (un)substituted (cyclo)alkyl, -(hetero)aryl(alkyl), etc.; R2 = OH, (hydroxy)alkoxy, etc.; R4 = H or alkyl; Z = CH₂, O, S, NR4; Z1 = (un)substituted phenylene, -pyridinediyl, -pyrimidinediyl, etc.] were prep'd. as cell adhesion inhibitors. Thus, (S)-4-[HO₂C(CH₂)₃O]C₆H₄CH(NH₂)CO₂CMe₃ was N-acylated by 1-naphthalenesulfonyl chloride and the product amidated by 1,4,5,6-tetrahydropyrimidine-2-amine to give, after sapon., title compd. (S)-II. Data for biol. activity of I were given.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

| | | | | | |
|-----------|---|------|----------|---|----------|
| L8 | ANSWER 5 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN | | | | |
| AN | 1999:511144 CAPLUS | | | | |
| DN | 131:129989 | | | | |
| TI | Preparation of thiazole compounds as pest control agents and fungicides | | | | |
| IN | Iihama, Teruyuki; Miyazawa, Masahiro; Miyahara, Osamu; Marumo, Shinji; Sano, Shinsuke; Hamamura, Hiroshi; Yokota, Chinami; Kawaguchi, Masahiro; Takahashi, Hidemitsu; Takagi, Masaë | | | | |
| PA | Nippon Soda Co., Ltd., Japan; et al. | | | | |
| SO | PCT Int. Appl., 60 pp.
CODEN: PIXXD2 | | | | |
| DT | Patent | | | | |
| LA | Japanese | | | | |
| FAN.CNT 1 | | | | | |
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI | WO 9940076 | A1 | 19990812 | WO 1999-JP473 | 19990204 |
| | W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, KE, KG, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG,
US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | JP 1998-24853 A 19980205
JP 1998-371694 A 19981225 | |
| JP | 11286488 | A2 | 19991019 | JP 1998-371695 | 19981225 |
| AU | 9922989 | A1 | 19990823 | JP 1998-24853 A 19980205
AU 1999-22989 19990204
JP 1998-24853 A 19980205
JP 1998-371694 A 19981225 | |
| JP | 2000239264 | A2 | 20000905 | WO 1999-JP473 W 19990204
JP 1999-28489 19990205
JP 1998-24853 A 19980205
JP 1998-371694 A 19981225 | |

OS MARPAT 131:129989
 GI



AB Thiazole compds. I [R = (un)substituted thieryl, furyl, pyridyl, thiazolyl, pyrimidinyl, pyrazinyl, etc.; R1, R2 = H, halo, alkyl; X = O, S, SO, SO₂; Y = C(:CHOMe)CO₂Me, (MeO)NCO₂Me, (EtO)NCO₂Me] and their salts, useful as insecticides, acaricides, fungicides, and protozoacides, were prep'd. Thus, reaction of 4-(4-methyl-2-pyridyl)-2-hydroxythiazole with Me (E)-3-methoxy-2-[2-(chloromethyl)phenyl]acrylate in DMF in the presence of K₂CO₃ at 90.degree. for 3 h gave 28% Me (E)-3-methoxy-2-{2-[4-(4-methyl-2-pyridyl)thiazol-2-yloxyethyl]phenyl}acrylate (II). II showed fungicidal activity against Erysiphe graminis at 200 ppm.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1999:77554 CAPLUS

DN 130:139363

TI Preparation of pyrazinedicarboxamides and analogs as hypoglycemics
 IN Bashiardes, Georges; Carry, Jean-Christophe; Evers, Michel; Filoche, Bruno; Mignani, Serge

PA Rhone-Poulenc Rorer S.A., Fr.

SO PCT Int. Appl., 100 pp.

CODEN: PIXXD2

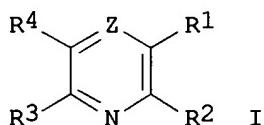
DT Patent

LA French

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|--|------------|
| PI | WO 9903844 | A1 | 19990128 | WO 1998-FR1542 | 19980715 |
| | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | |
| | | | | FR 1997-9058 | A 19970717 |
| FR | 2766187 | A1 | 19990122 | FR 1997-9058 | 19970717 |
| FR | 2766187 | B1 | 20000602 | | |
| AU | 9888102 | A1 | 19990210 | AU 1998-88102 | 19980715 |
| AU | 747127 | B2 | 20020509 | FR 1997-9058 | A 19970717 |

| | | | |
|---|----|----------|---------------------------|
| EP 1001944 | A1 | 20000524 | WO 1998-FR1542 W 19980715 |
| EP 1001944 | B1 | 20031001 | EP 1998-939676 19980715 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI | | | |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 W 19980715 | | | |
| JP 2001510188 | T2 | 20010731 | JP 2000-503069 19980715 |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 W 19980715 | | | |
| NZ 501906 | A | 20020426 | NZ 1998-501906 19980715 |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 W 19980715 | | | |
| BR 9810880 | A | 20020521 | BR 1998-10880 19980715 |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 W 19980715 | | | |
| RU 2194703 | C2 | 20021220 | RU 2000-103449 19980715 |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 W 19980715 | | | |
| ZA 9806337 | A | 19990127 | ZA 1998-6337 19980716 |
| FR 1997-9058 A 19970717 | | | |
| NO 2000000198 | A | 20000114 | NO 2000-198 20000114 |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 W 19980715 | | | |
| US 6399613 | B1 | 20020604 | US 2000-483984 20000114 |
| FR 1997-9058 A 19970717 | | | |
| WO 1998-FR1542 A19980715 | | | |
| OS MARPAT 130:139363 | | | |
| GI | | | |



AB Title compds. [I; 2 of R1-R4 = CONR5R6, CO(CH₂OH)₂, CH₂OR₆, etc. and the others = H; R₆ = H or alkyl; R₆ = CH₂[CH(OH)]_mCH₂OH, (hydroxy)alkoxyalkyl, etc.; m = 0-4] were prep'd. Thus, di-Me pyrazine-2,5-dicarboxylate was amidated by H₂NC(CH₂OH)₃ to give I [R₁ = R₃ = CONHC(CH₂OH)₃, R₂ = R₄ = H]. Data for biol. activity of I were given.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1998:124009 CAPLUS
 DN 128:188622
 TI IL-8 receptor antagonists
 IN Bryan, Deborah Lynn; Gleason, John Gerald; Widdowson, Katherine L.
 PA Smithkline Beecham Corporation, USA; Bryan, Deborah Lynn; Gleason, John
 Gerald; Widdowson, Katherine L.
 SO PCT Int. Appl., 44 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|---------------------------|----------|
| PI | WO 9806398 | A1 | 19980219 | WO 1997-US14582 | 19970815 |
| | W: JP, US
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | US 1996-23972P P 19960815 | |
| EP | 939634 | A1 | 19990908 | EP 1997-938426 | 19970815 |
| | R: BE, CH, DE, ES, FR, GB, IT, LI, NL | | | US 1996-23972P P 19960815 | |
| JP | 2000516620 | T2 | 20001212 | WO 1997-US14582W | 19970815 |
| | | | | JP 1998-510107 | 19970815 |
| | | | | US 1996-23972P P 19960815 | |
| | | | | WO 1997-US14582W | 19970815 |

OS MARPAT 128:188622

AB This invention relates to novel compds. and compns. useful in the treatment of disease states mediated by the chemokine, interleukin-8 (IL-8). A no. of general heterocyclic guanidine derivs. were given as examples.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

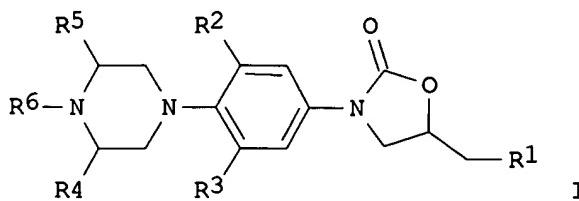
L8 ANSWER 8 OF 11 CAPIUS COPYRIGHT 2003 ACS on STN
AN 1998:65906 CAPIUS
DN 128:140727
TI Preparation of substituted piperazinyl-phenyl-oxazolidinone derivatives as antibacterial agents
IN Betts, Michael John; Darbyshire, Catherine Jane
PA Zeneca Ltd., UK; Betts, Michael John; Darbyshire, Catherine Jane
SO PCT Int. Appl., 68 pp.
CODEN: PIXXD2

DT Patent
LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|---------------------------|----------|
| PI | WO 9801446 | A1 | 19980115 | WO 1997-GB1767 | 19970701 |
| | W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL,
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US,
UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
GN, ML, MR, NE, SN, TD, TG | | | GB 1996-14238 A 19960706 | |
| AU | 9733520 | A1 | 19980202 | AU 1997-33520 | 19970701 |
| | | | | GB 1996-14238 A 19960706 | |
| | | | | WO 1997-GB1767 W 19970701 | |
| EP | 918769 | A1 | 19990602 | EP 1997-929403 | 19970701 |
| | R: CH, DE, FR, GB, IT, LI | | | GB 1996-14238 A 19960706 | |
| JP | 2000514083 | T2 | 20001024 | WO 1997-GB1767 W 19970701 | |
| | | | | JP 1998-504900 | 19970701 |
| | | | | GB 1996-14238 A 19960706 | |
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| ZA | 9705953 | A | 19980106 | ZA 1997-5953 | 19970703 |
| | | | | GB 1996-14238 A 19960706 | |

OS MARPAT 128:140727
 GI



AB The title compds. [I; R1 = OH, Cl, F, etc.; R2, R3 = H, F; R4, R5 = H, Me; R6 = (un)substituted 6-membered heteroaryl ring contg. 2-3 ring nitrogen atoms as the only ring heteroatoms], useful as antibacterial agents, were prepd. Thus, reaction of N-(5S)-3-[3-fluoro-4-(piperazin-1-yl)phenyl]-2-oxooxazolidin-5-ylmethylacetamide trifluoroacetate salt with 2-chloropyrimidine in the presence of Et3N in EtOH/H2O afforded (5S)-I [R1 = NHC(O)Me; R2 = F; R3-R5 = H; R6 = pyrimidin-2-yl] which showed MIC of 0.5 .mu.g/mL against Staphylococcus aureus (Oxford).

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1995:892828 CAPLUS

DN 123:286063

TI Preparation of vasoconstrictive dihydrobenzopyranpyrimidine derivatives
 IN Van Lommen, Guy Rosalia Eugene; Wigerinck, Piet Tom Bert Paul; De Bruyn, Marcel Frans Leopold; Verschueren, Wim Gaston; Schroven, Marc Francis Josephine

PA Janssen Pharmaceutica N.V., Belg.

SO PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|------------------|----------|
| PI | WO 9505383 | A1 | 19950223 | WO 1994-EP2703 | 19940812 |
| | W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, US, UZ, VN | | | EP 1993-202441 A | 19930819 |
| | RW: KE, MW, SD, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | EP 1993-202442 A | 19930819 |
| | | | | EP 1993-202443 A | 19930819 |
| | CA 2168021 | AA | 19950223 | CA 1994-2168021 | 19940812 |
| | | | | EP 1993-202441 A | 19930819 |
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| | | | | EP 1993-202443 A | 19930819 |
| | AU 9476131 | A1 | 19950314 | AU 1994-76131 | 19940812 |
| | AU 677428 | B2 | 19970424 | EP 1993-202441 A | 19930819 |
| | | | | EP 1993-202442 A | 19930819 |

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|--------------------------------|----|----------|------------------------------------|
| | | | EP 1993-202443 A 19930819 |
| | | | WO 1994-EP2703 W 19940812 |
| BR 9407317 | A | 19960416 | BR 1994-7317 19940812 |
| | | | EP 1993-202441 A 19930819 |
| | | | EP 1993-202442 A 19930819 |
| | | | EP 1993-202443 A 19930819 |
| | | | WO 1994-EP2703 W 19940812 |
| EP 714396 | A1 | 19960605 | EP 1994-926191 19940812 |
| R: AT, BE, CH, DE, DK, ES, FR, | | | GB, GR, IE, IT, LI, LU, NL, PT, SE |
| | | | EP 1993-202441 A 19930819 |
| | | | EP 1993-202442 A 19930819 |
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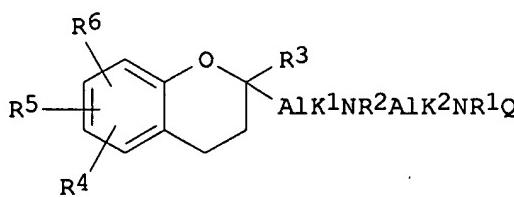
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FAN 1995:606716

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KR, KZ, LK, LT, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI,
SK, TJ, TT, UA, US, UZ, VN | | | | |
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OS MARPAT 123:286063
GI



AB Title compds. I (R1, R2, R3 = H, C1-6 alkyl; R4 = H, halo, C1-6 alkyl, HO, C1-6 alkyloxy, aryloxy, arylmethoxy; R5, R6 = H, CH:CHCH:CH, (CH₂)_n, (CH₂)_mX, wherein n = 3,4, m = 2,3, X = O, S, SO, SO₂, CO, R7N wherein R7 = H, C1-6 alkyl, C1-6 alkylcarbonyl, C1-6-SO, HC.tplbond.C, (substituted) heterocyclyl, etc.; Alk1 = C1-5 alkanediyl; Alk2 = c2-15 alkanediyl; Q =

(substituted) heterocyclyl), a salt or stereochem isomer thereof, are prep'd. (.-.)-2,3,4,7,8,9-Hexahydrobenzo[2,1-b:3,4-b']dipyran-2-carboxaldehyde and N-2-pyrimidinyl-1,2-proanediamine were hydrogenated with Pd/C to give after workup I (R1 = R2 = R3 = H, Alk1 = H2C, Alk2 = (CH2)3, Q = 2-pyrimidinyl)-ethanedioate (1:2) (II). Vasoconstriction activity wherein serotonin-like response tested on basilar arteries of pigs was detd. The lowest active concn. defined as the concn. at which 50% of the response to serotonin for II was 3.10-8M. Pharmaceutical formulations comprising I are given.

L8 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1992:479637 CAPLUS

DN 117:79637

TI Nonlinear optical material containing 1,3-diketone derivative

IN Nakamura, Satoshi; Imahashi, Satoshi

PA Toyobo Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

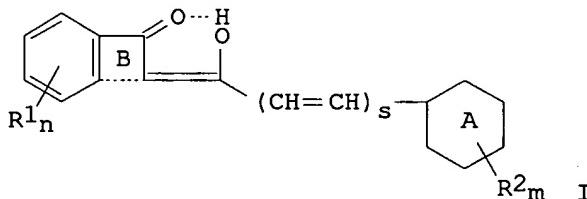
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
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| | | | | JP 1990-153108 | 19900612 |
| OS | MARPAT | 117:79637 | | | |
| GI | | | | | |



AB The material contains I (R1, R2 = NH2, C1-12 substituted amino, alkyl, alkoxy, mercaptoalkoxy, halo, carboxy, carboxylate ester, C1-12 alkanoyloxy, NO2, CN, alkanoamide; n, m = 1-5; A = arom. hydrocarbon residue, heteroarom. cycle; B = C5-7 ring; s = 0-4). The material shows high second harmonic generation.

L8 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1988:630806 CAPLUS

DN 109:230806

TI Preparation of 4-(heterocyclyl)chroman derivatives as cardiovascular agents

IN Haeusler, Guenther; Gericke, Rolf; Wurziger, Hanns; Baumgarth, Manfred; Lues, Inge; De Peyer, Jacques; Bergmann, Rolf

PA Merck Patent G.m.b.H., Fed. Rep. Ger.

SO Ger. Offen., 13 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 6

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
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FAN 1990:142632

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| NO 174467 | B | 19940131 | |
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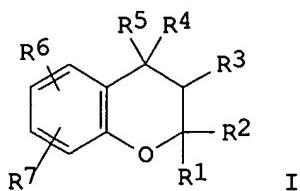
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FAN 1991:105076

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
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AB The title compds. [I; R1 = C1-6 alkyl; R2 = H, R1; R1R2 = C3-6 alkylene; R3 = OH, OAc; R4 = H; R3R4 = bond; R5 = (substituted) (partially reduced) pyridonyl, pyridazinonyl, pyrimidinonyl, pyrazinonyl, thiopyridonyl; R6, R7 = H, R1, OH, alkoxy, CHO, HO₂C, hydroxyalkyl, carbamoyl, etc.] and their salts were prepd. as cardiovascular agents (no data).
 2,2-Dimethyl-3,4-epoxy-6-cyanochroman, 2-pyridone, and NaH were stirred 16 h in DMSO at 70.degree. to give a 9:7 mixt. of 2,2-dimethyl-4-(1H-2-pyridon-1-yl)-6-cyano-2H-chromene (II) and 2,2-dimethyl-4-(1H-2-pyridon-1-yl)-6-cyanochroman-3-ol (III). Formulations contg. II and III were prepd.

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| => log y | | |
| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| FULL ESTIMATED COST | ENTRY | SESSION |
| | 268.19 | 429.51 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| CA SUBSCRIBER PRICE | ENTRY | SESSION |
| | -39.06 | -39.06 |

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